

Dec. 31, 1935.

A. L. WENNER-GREN

2,025,946

VACUUM CLEANER

Filed Aug. 11, 1932

Fig. 1.

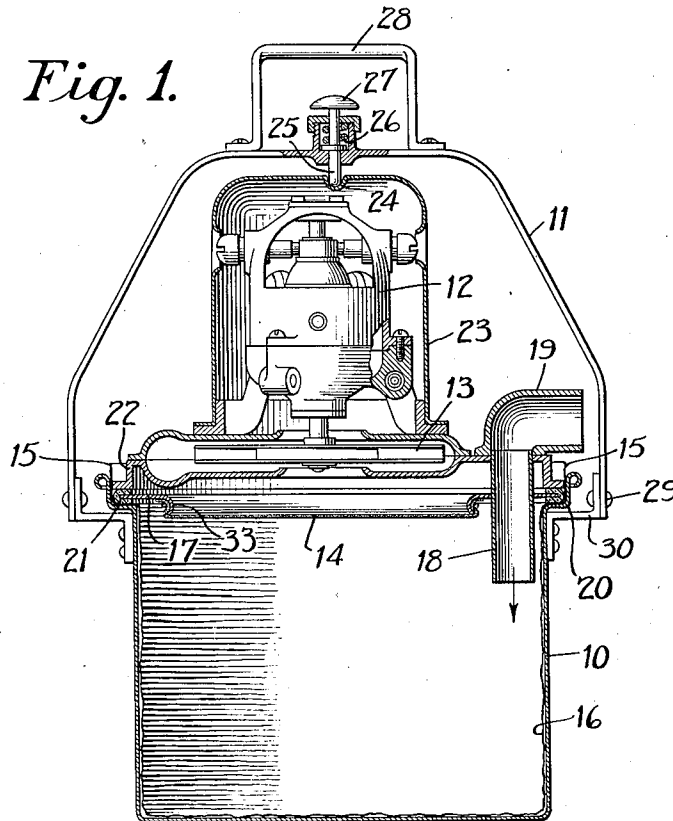
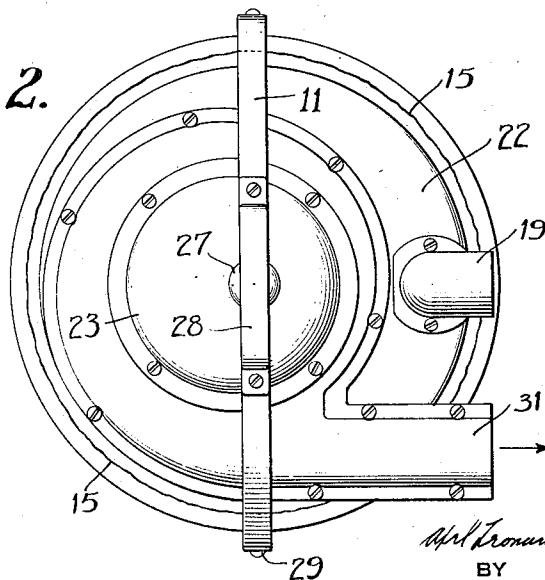


Fig. 2.



INVENTOR

Alfred Wenner-Gren

BY

Wm. T. Drollund

ATTORNEY

UNITED STATES PATENT OFFICE

2,025,946

VACUUM CLEANER

Axel Leonard Wenner-Gren, Stockholm, Sweden,
assignor to Electrolux Corporation, Dover, Del.,
a corporation of Delaware

Application August 11, 1932, Serial No. 628,324
In Germany August 17, 1931

8 Claims. (Cl. 183—37)

The present invention has for its object to provide a vacuum cleaner in which it is possible to remove the dust collected with ease and hygienically.

5 In accordance with the invention the dust is led into a receptacle of impervious material in which is provided a dust receiver of readily destroyable material, such as paper, which receiver is also impervious. The air leaves the receiver through a pervious dust separator which is preferably positioned at the top of the receiver whereby the dust falls downwardly into the receiver and the air passes upwardly through the dust separator.

15 A feature of the invention consists in the provision of a handle cooperating with the receptacle to hold a member comprising the aforesaid dust separator on the receptacle with the dust receiver held between the receptacle and such member.

20 Further objects and the nature and advantages of the invention will become apparent from a consideration of the following description taken in conjunction with the accompanying drawing showing one form of the invention, which drawing constitutes a part of this specification, and of which:

Fig. 1 is a vertical cross-sectional view through a vacuum cleaner embodying the invention; and

25 Fig. 2 is a top or plan view of the cleaner shown in Fig. 1.

30 The vacuum cleaner comprises a receptacle 10 of impervious material, such as sheet metal. Secured to the receptacle 10 is a handle 11. A motor 12 positioned between the receptacle and the handle drives a fan 13. Below the fan and between the interior of the receptacle 10 and the fan is a dust separator 14 of pervious material, such as cloth.

35 Within the receptacle 10 and closely adjacent the wall of the receptacle is a dust receiver 16 made of impervious material which can be readily destroyed, such as paper. The upper part of the dust receiver or paper bag 16 is held between a flange 20 on the upper part of the receptacle 10 and a supporting member 17 for the dust separator 14 and preferably extends beyond these members so that it may be held in place by the hand while the member 17 is being put in place. In this way the upper edge 15 is prevented from getting folded under member 17. The member 17 may consist of an annular plate edged with a rubber band 21, which rubber band seats on the outwardly extending flanged portion 20 of the receptacle. The member 17 is preferably formed with an inner flange 33 curved to form a groove

so that the dust separation cloth 14 can be tied in the groove by a string and so that this cloth can be readily replaced.

A housing 22 for the fan rests on the top of the rubber member 21. Mounted on the housing 5 22 is the motor 12 and the motor housing 23. An indentation 24 is formed in the upper part of the motor housing into which sets a pin 25 which is pressed downwardly by a spring 26 and which may be pulled upwardly by means of a knob 27. 10 The handle 11 is provided in its upper part with a hand-grip 28. The handle is pivotally mounted at 29 to brackets 30 secured to the metal receptacle 10. When the handle is in position with pin 25 engaging indentation 24, the handle serves 15 to clamp the parts together and to effect an airtight seal between the receptacle 10, the top of the bag 16, the rubber band 21 on member 17 and the base of housing 22. Moreover, this arrangement for clamping the parts together does not 20 interfere with the top 15 of the bag protruding beyond the other parts. An inlet connection 18 extends through plate 17 and is joined to an elbow 19 on housing 22 into which a suction hose may be inserted. The fan 13 discharges through 25 connection 31 to which a hose may also be attached for blowing purposes.

The operation of the vacuum cleaner is as follows:

Dust-laden air enters through the connection 30 19 and flows downwardly through pipe 18 into the interior of the receiver or bag 16. Dust is deposited in the bag 16 as the air is reduced in velocity and changes its direction to pass upwardly through the dust separator 14, on the 35 surface of which remaining dust is withdrawn from the air stream. Dust falls downwardly from the dust separator and collects in the bottom of the receiver 16. The fan draws air upwardly through separator 14 and into the center of the 40 fan and discharges the air outwardly to be discharged at 31 to the atmosphere or other suitable place of disposal.

To remove dust from the vacuum cleaner the knob 27 is lifted whereby the handle 11 can be 45 swung on the pivot 29 so that the motor can be lifted off of the receptacle 10. With the motor the fan housing is lifted off which leaves the member 17 and the dust separator 14. This part is now taken out and the paper bag 16 can be 50 removed. If desired, and preferably, the bag 16 is provided at its upper edge with a draw-string whereby it can be readily closed so that it may be thrown away without spreading dust into the atmosphere. Such a bag may readily be burned 55

along with its contents without removing the latter from the bag. A new bag 16 can then be placed in the container and the parts put together in the reverse order.

5 It will be noted that the air does not pass through the collecting bag which permits the latter to be made impervious. Thus the dust can be closed in the bag before the bag is removed from the vacuum cleaner and there is little likelihood of dust escaping into the atmosphere, as
10 hood of dust escaping into the atmosphere, as can readily take place with bags of the type which are designed to have the air pass through them.

It will be apparent that when the apparatus is in
15 operation the pressure within the bag is less than atmospheric. Hence, there is no danger of the bag bursting. However, if atmospheric pressure were permitted to act on the outside of the bag, it would collapse the bag. The provision of the
20 receptacle 10 of rigid impervious material closely surrounding the bag prevents atmospheric pressure from acting on the bag and therefore prevents collapse of the latter.

It will be seen that with respect to both the
25 dust separation member 14 and the destructible bag 16 that renewal is easy and cheap.

What I claim is:

1. In a vacuum cleaner, a rigid receptacle of impervious material having an opening at the
30 top, a paper bag fitting into said receptacle, a member adapted to fit onto said receptacle with the paper bag held between said receptacle and said member, a motor and fan unit seating on said member, and a handle pivoted to said receptacle and being engageable with said fan and
35 motor unit to clamp the unit against said member.

2. In a vacuum cleaner, a rigid receptacle of impervious material having an opening at the top, a paper bag fitting into said receptacle, a
40 member adapted to fit onto said receptacle with the paper bag held between said receptacle and said member, a fan housing seating on said member, a motor housing secured to said fan housing, and a handle pivoted to said receptacle and being
45 engageable with said motor housing to clamp said fan housing against said member.

3. A vacuum cleaner comprising a dust receptacle of impervious material having an opening at the top, a closure member for said opening,
50 means for withdrawing air through an aperture in said closure member, a dust separating member across said aperture, a dust receiver of flexible impervious material fitting in said receptacle and being substantially supported thereby and
55 having an opening corresponding to the opening at the top of said receptacle, and an inlet conduit passing through said closure member and extending through the openings in said receptacle and in said dust receiver.

4. A vacuum cleaner comprising a dust receptacle of impervious material having an opening at the top, a closure member for said opening,
60 means for withdrawing air through an aperture in said closure member, a dust separating member across said aperture, a paper bag fitting into said receptacle and snugly lining the receptacle up to the closure member and having an opening
65 corresponding to the opening at the top of said receptacle, the upper part of said bag extending between said receptacle and said closure member and being secured thereby, and an inlet conduit passing through said closure member and
70 extending through the openings in said receptacle and in said bag.

5. A vacuum cleaner comprising a dust receptacle of impervious material having a bell-flanged opening at the top, a closure member for said opening seating in said bell-flange, means
5 for withdrawing air through an aperture in said closure member, a dust separating member across said aperture, a paper bag fitting into said receptacle and having an opening at the top thereof, the upper part of said bag extending between
10 said bell-flange and said closure member and being secured thereby, and an inlet conduit passing through said closure member and extending through the openings in said receptacle and in said bag.

6. A vacuum cleaner comprising a dust receptacle of impervious material having an opening at the top, a closure member for said opening, means for withdrawing air through an aperture
15 in said closure member, a plate member extending across said opening and between said receptacle and said closure member, said plate member being formed with an aperture therethrough, a pervious dust separating member over said
20 aperture, a dust receiver of flexible impervious material fitting in said receptacle and having an opening corresponding to the opening at the top of said receptacle, the upper part of said dust receiver extending between said receptacle and
25 said plate and closure members, and an inlet conduit passing through said closure member and said plate member and extending through the openings in said receptacle and in said dust receiver.

7. A vacuum cleaner comprising a dust receptacle of impervious material having a bell-
35 flanged opening at the top, a closure member for said opening seating in said bell-flange, means for withdrawing air through an aperture in said closure member, a plate member extending across said opening and seating in said bell-flange between the bell-flange and said closure
40 member, said plate member being formed with an aperture therethrough, a pervious dust separating member over said aperture, a dust receiver of flexible impervious material fitting in said receptacle and having an opening at the top thereof, the upper part of said dust receiver
45 extending between said bell-flange and said plate and closure members, and an inlet conduit passing through said closure member and said plate member and extending through the openings in said receptacle and in said dust receiver.

8. A vacuum cleaner comprising a dust receptacle of impervious material having an opening at the top, a closure member for said opening,
55 means for withdrawing air through an aperture in said closure member, a plate member extending across said opening and between said receptacle and said closure member, packing means on said plate member between said receptacle
60 and said closure member for effecting an air tight seal therebetween, said plate member being formed with an aperture therethrough, a pervious dust separating member over said aperture, a dust receiver of flexible impervious material
65 fitting in said receptacle and having an opening at the top thereof, the upper part of said dust receiver extending between said bell-flange and said plate and closure members, and an inlet
70 conduit passing through said closure member and said plate member and extending through the openings in said receptacle and in said dust receiver.

AXEL LEONARD WENNER-GREN.