Dec. 20, 1960 O. L. ALLEN ET AL 2,964,777

VACUUM CLEANER AND CORDWINDER COMBINATION

Filed March 20, 1957 2 Sheets-Sheet 1

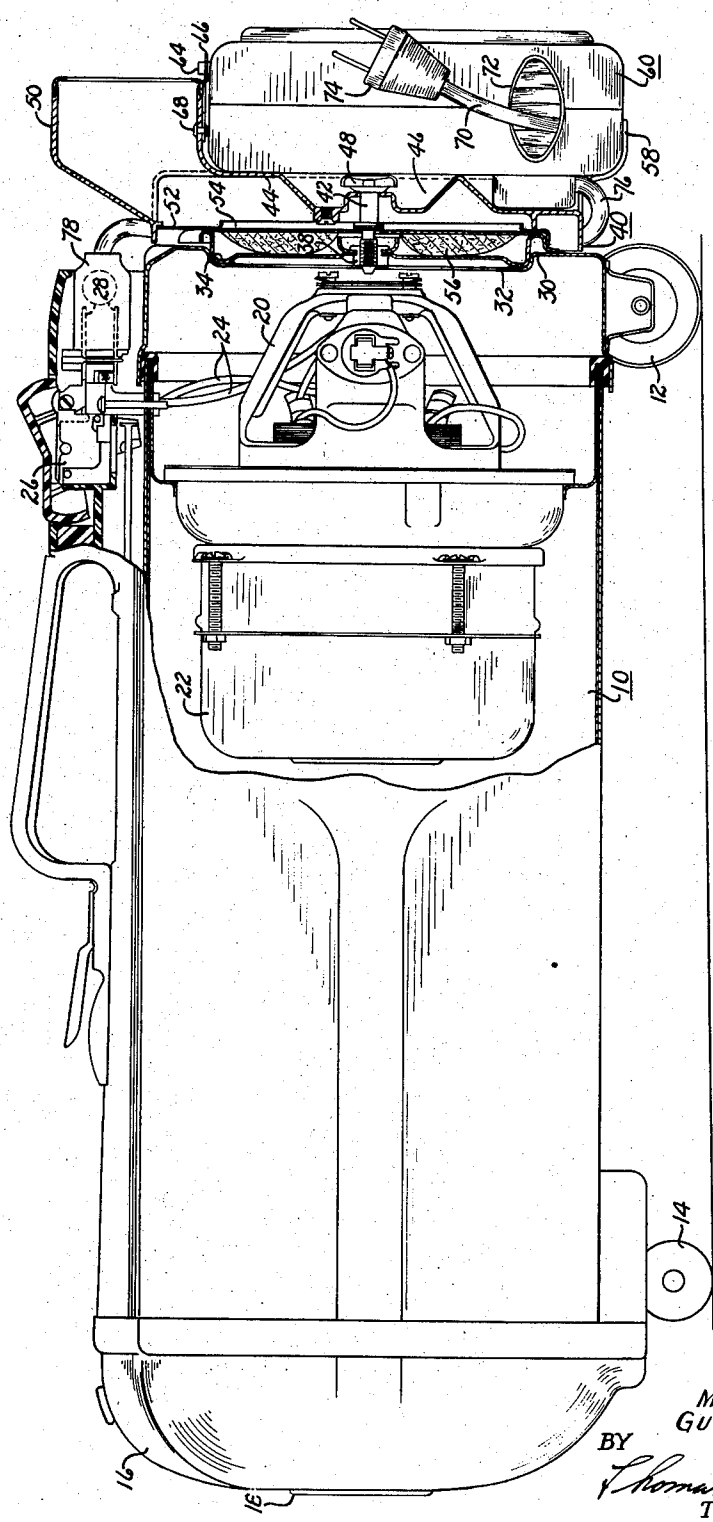


Fig. 1

INVENTORS
OLIVER L. ALLEN
MICHAEL E. BELICKA
GUSTAF E. LOFGREN

BY
Thomas C. Betts
THEIR ATTORNEY

Dec. 20, 1960 O. L. ALLEN ET AL 2,964,777

VACUUM CLEANER AND CORDWINDER COMBINATION

Filed March 20, 1957 2 Sheets-Sheet 2

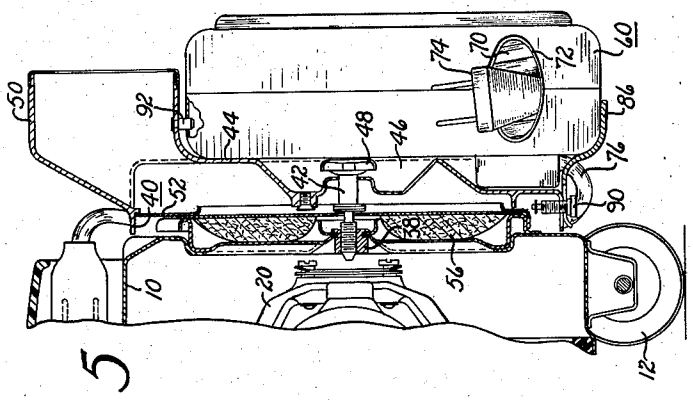


Fig. 5

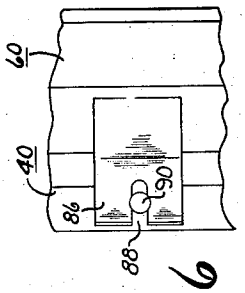


Fig. 6

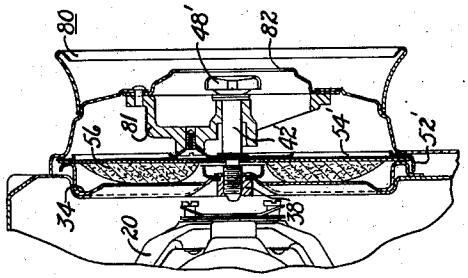


Fig. 4

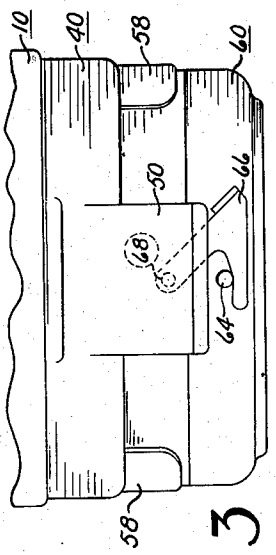


Fig. 3

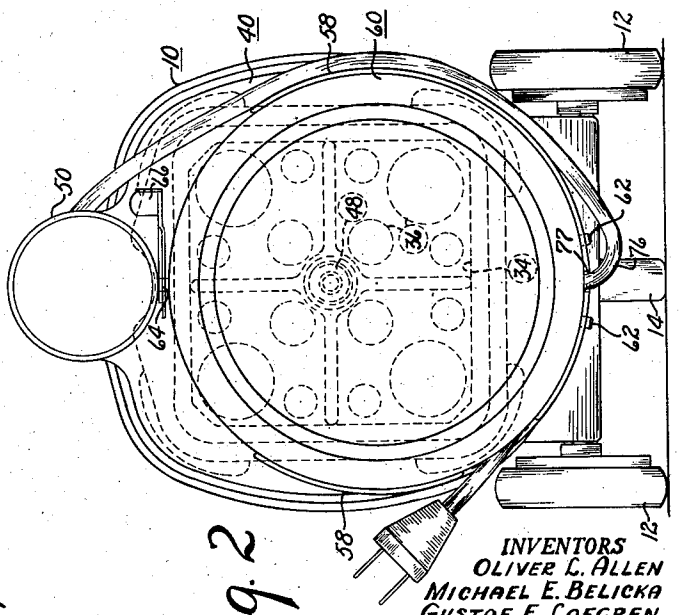


Fig. 2

INVENTORS
OLIVER L. ALLEN
MICHAEL E. BELICKA
GUSTAF E. LOFGREN

BY
Thomas C. Britts
THEIR ATTORNEY

United States Patent Office 2,964,777 Patented Dec. 20, 1960

2,964,777

VACUUM CLEANER AND CORDWINDER COMBINATION

Oliver L. Allen, Riverside, Michael E. Belicka, Greenwich, and Gustaf E. Lofgren, Riverside, Conn., assignors to Electrolux Corporation, Fairfield, Conn., a corporation of Delaware

Filed Mar. 20, 1957, Ser. No. 647,241

7 Claims. (Cl. 15—323)

Our invention relates to the combination of a vacuum cleaner, and particularly a tank type cleaner, with a removable cordwinder.

Heretofore, it has been the practice to secure a cordwinder to the exhaust opening at the rear end of a cleaner of this type, the cordwinder being spaced some distance from the cleaner casing in order to provide for the escape of exhaust air. However, in order to make it possible to connect a hose to the exhaust opening for blowing operations, it has been necessary to either remove the cordwinder entirely during these operations or to provide a hinge arrangement by means of which the cordwinder may be swung to one side.

Among the objects of our present invention is to provide a detachable cordwinder which, however, need not be removed from the cleaner or disturbed in any way when it is desired to connect the hose to the exhaust opening. Further objects and advantages of our invention will be apparent from the following description when considered in connection with the accompanying drawings which form part of the specification and of which:

Fig. 1 is a side view partially in cross-section, showing one embodiment of our invention;

Fig. 2 is a rear view of the device shown in Fig. 1;

Fig. 3 is a top view of a portion of the device shown in Fig. 1;

Fig. 4 is a cross-sectional view showing a cordholder substituted in place of certain parts shown in the preceding figures;

Fig. 5 is a cross-sectional view showing a second embodiment of our invention; and

Fig. 6 is a bottom view of the device shown in Fig. 5.

Referring more particularly to Figs. 1 through 3, reference character **10** designates generally the body of a tank type vacuum cleaner which is adapted to be supported on a horizontal surface by means of a pair of rear wheels **12** and a front caster **14**. Removably secured to the front end of body **10** is a front cover **16** provided with an inlet opening **18**.

Mounted within body **10** near the rear end thereof is a motor-fan unit including an electric motor **20** driving a centrifugal fan **22**. The motor is supplied with current through conductors **24** which are connected through an electric switch **26** to contact prongs **28**.

The rear end of body **10** is formed with a transverse wall **30** having a rectangular opening **32**. Suitably secured to the outside of wall **30**, as by spot welding is a plate **34** provided with a number of openings **36**, as will be seen particularly in Fig. 2. The central part of plate **34** carries a threaded member **38**.

An end member designated generally by reference character **40** is removably secured to the outer face of wall **30** by means of a bolt **42** which engages the threaded member **38**. Member **40** is provided with a transverse wall **44** having a depression **46** in which is received the head **48** of bolt **42**. At the upper edge

of wall **44** member **40** is formed with an outlet passage which terminates in a horizontally extending hose connection **50**. A plate **52** is mounted within member **40** so that its large central opening **54** is in alignment with the holes **36** formed in the plate **34**. If desired, a filter pad **56** may be held in place between the plates **34** and **52**.

Extending rearwardly from member **40** is circular cradle **58** which has an arcuate extent of somewhat more than 180°. Reference character **60** designates generally a cordwinder which is cylindrical in shape and has an outer diameter substantially the same as the inner diameter of the cradle **58**. The lower part of the cordwinder is provided with a pair of pins **62** which are adapted to extend through corresponding apertures formed in the cradle **58**, while the upper part of the cordwinder is formed with a pin **64** which may be engaged by a latch **66** pivotally mounted at **68** on the underside of hose connection **50**.

The cordwinder **60** is provided therein with the usual spring actuated reel or drum upon which an electric cord **70** may be wound when not in use. When it is desired to operate the vacuum cleaner, the cord **70** may be pulled out through the opening **72** formed in the cordwinder casing and the plug **74** inserted in a suitable electrical receptacle. A comparatively short electric cord **76** extends from the rear of the cordwinder through a slot **77** formed in the bottom of cradle **58** and is provided with a plug **78** which may engage the prongs **28**, so as to supply current to the motor **20**.

During normal operation of the device as a vacuum cleaner, a flexible hose is connected to the inlet **18**. Operation of the motor **20** causes the fan **22** to induce flow of air through the inlet **18**, and this air is discharged through and around the motor **20** from whence it passes through the openings **36** in the plate **34**, through the filter **56** and the opening **54** in the plate **52**, to be discharged finally through the hose connection **50**. If it is desired to use the vacuum cleaner for blowing purposes, the hose may be connected to the connection **50** without disturbing the cordwinder **60**. If it is desired for any reason to remove the cordwinder from the vacuum cleaner this may be done by merely pivoting the latch **66** in a counterclockwise direction, as viewed in Fig. 3, so as to release it from engagement with pins **64**. The cordwinder **60** may then be pivoted outwardly until its upper edge is beyond the outer end of hose connection **50**, whereupon it may be lifted slightly so as to disengage pins **62** from the apertures in cradle **58**. Removal of the cordwinder from the end member **40** is necessary in the event it is desired to change the filter **56**. To do this, after the cordwinder has been removed as above described, the head **48** of screw **42** is accessible so that the latter may be unscrewed from the member **38**. Thereupon, the filter **56** may be removed and replaced with a new one and the parts reassembled.

In the event a cordwinder is not desired, the end member **40** may be removed, and replaced by the hollow circular member **80** shown in Fig. 4. This member has an inner arm **81** which carries a threaded bolt **42'** having a head **48'**, the bolt being arranged to engage the threaded member **38** in the same manner as does bolt **42** in Fig. 1. Member **80** is formed with a central exhaust opening **82** through which the head **48'** is accessible and to which the hose may be connected for blowing purposes. An electric cord for supplying current to the motor **20** may be wound around the exterior of cylindrical member **80** for storage purposes.

A slightly modified embodiment of our invention is shown in Figs. 5 and 6. Here the end member **40** is the same as that previously disclosed with the exception

that it does not have a circular cradle 58 or a pivoted latch member 66. Instead, an arm 86 is secured to the lower portion of the cordwinder and this arm is formed with a slot 88 through which extends a bolt 90 having threaded engagement with end member 40. A pin 92 extends downwardly from hose connection 50 and is adapted to engage an aperture formed in the casing of the cordwinder.

In order to secure the cordwinder to the member 40, it is placed in position against the outer surface of rear wall 44 with pin 92 engaging the aperture in the cordwinder case and with the bolt 90 received within the slot 88. Thereupon, the bolt 90 is screwed up tight so as to hold the cordwinder in place.

Otherwise, this embodiment is the same as that previously described.

It will be seen that, in accordance with either of the embodiments of our invention, we have provided an arrangement whereby a cordwinder may be detachably connected to the rear end of a tank type vacuum cleaner without in any manner interfering with the connection of a hose to the exhaust opening of the cleaner.

While we have shown two more or less specific embodiments of our invention it is to be understood that this has been done for the purpose of illustration only and that the scope of our invention is not to be limited thereby, but is to be determined from the appended claims.

What we claim is:

1. In a vacuum cleaner, an elongated housing open at one end, a motor-fan unit in said housing for producing flow of air therethrough, an end member having a substantially transverse wall portion and being formed with an outlet passage disposed at one edge of the wall, a fastening member passing through said wall portion and engageable with an element fixed with respect to said housing for removably securing said end member to said housing, said wall portion being formed with a recess for receiving the outer end of said fastening member, a casing enclosing a cordwinder for supplying current to said motor, and means for removably securing said casing to the exterior of said end member closely adjacent to the outer side of said wall covering said recess and entirely to one side of said outlet passage.

2. A device as defined in claim 1 in which said outlet passage terminates in a hose connection extending substantially normal to the plane of said wall, and the means for removably securing said casing to the exterior of said end member includes a member carried by said hose connection removably engaging said casing.

3. A device as defined in claim 1 in which the means for removably securing said casing to the exterior of said end member includes cradle means carried by said member outwardly of said wall and having a shape conforming to the outer contour of said casing, and releasable means for securing said casing in said cradle means.

4. A device as defined in claim 3 in which said releasable means comprises a pivotally mounted latch member.

5. A device as defined in claim 2 in which the means for removably securing said casing to the exterior of said end member includes cradle means carried by said member outwardly of said wall and opposite said hose connection and having a shape conforming to the outer contour of said casing, said member carried by said hose connection serving to secure said casing in said cradle means.

6. A device as defined in claim 1 in which the means for removably securing said casing to the exterior of said end member includes interlocking means for securing the upper part of the casing to said member, an arm secured to the lower part of the casing and extending underneath said member, and manually engageable and releasable means for securing said arm to said member.

7. A device as defined in claim 1 in which said outlet passage terminates in a hose connection extending substantially normal to the plane of said wall, and the means for removably securing said casing to the exterior of said end member includes means mounted on said hose connection for securing the upper part of said casing to said member, an arm secured to said casing and extending underneath said member, and manually engageable and releasable means for securing said arm to said member.

References Cited in the file of this patent

UNITED STATES PATENTS

1,260,626	Berg	Mar. 26, 1918
1,960,922	Richard	May 29, 1934
2,323,275	Lofgren	June 29, 1943
2,348,966	Dow et al.	May 16, 1944
2,375,917	Gross	May 15, 1945
2,794,513	Hultberg et al.	June 4, 1957
2,825,087	Meyerhoefer	Mar. 4, 1958
2,825,924	Humphrey	Mar. 11, 1958
2,848,731	Tamarin	Aug. 26, 1958

FOREIGN PATENTS

733,530	Great Britain	July 13, 1955