

Aug. 26, 1958

Filed July 27, 1949

B. J. TAMARIN
VACUUM CLEANER WITH ELECTRIC
CORD-REEL ATTACHMENT

2,848,731

7 Sheets-Sheet 1

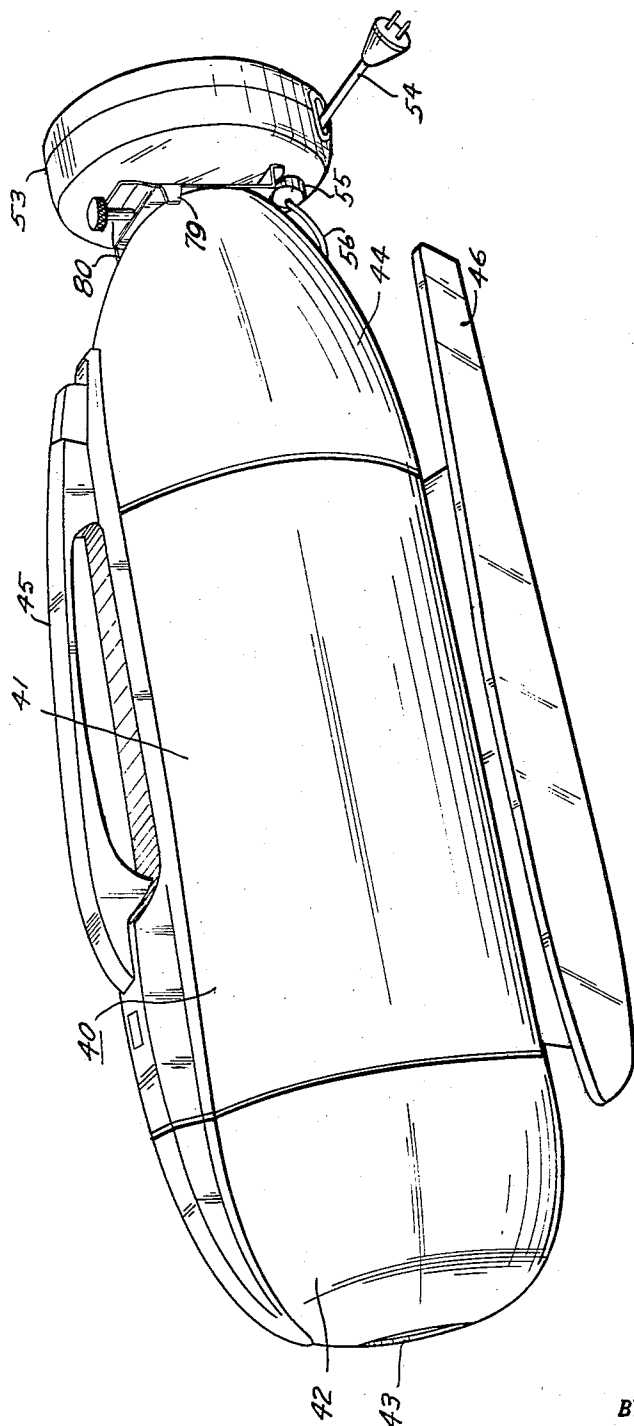


Fig. 1.

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7 Sheets-Sheet 2

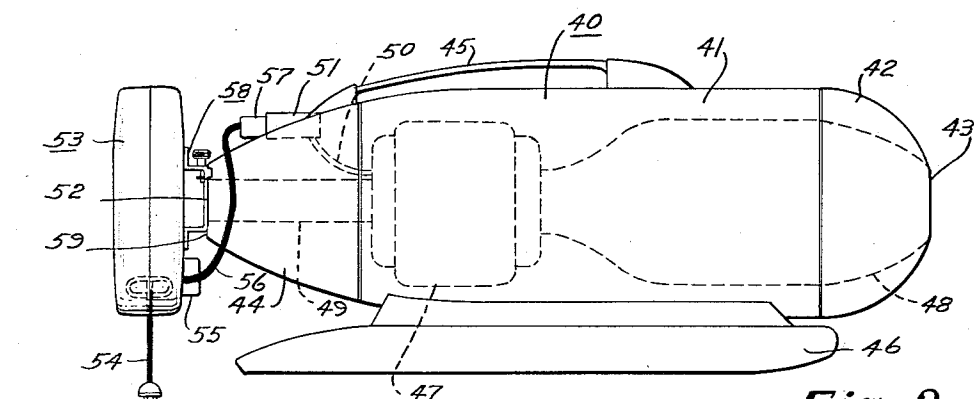


Fig. 2.

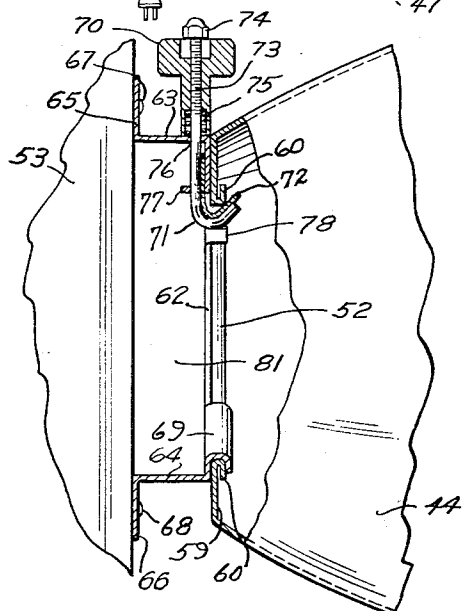


Fig. 3.

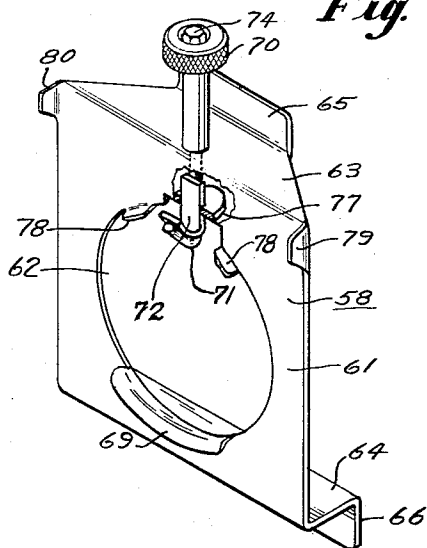


Fig. 4.

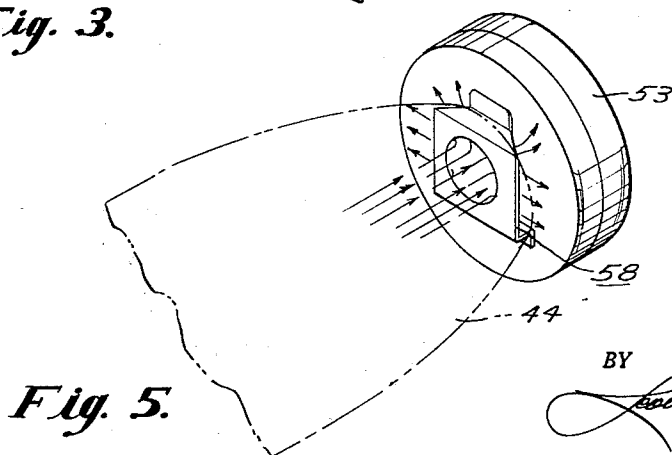


Fig. 5.

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Fig. 7.

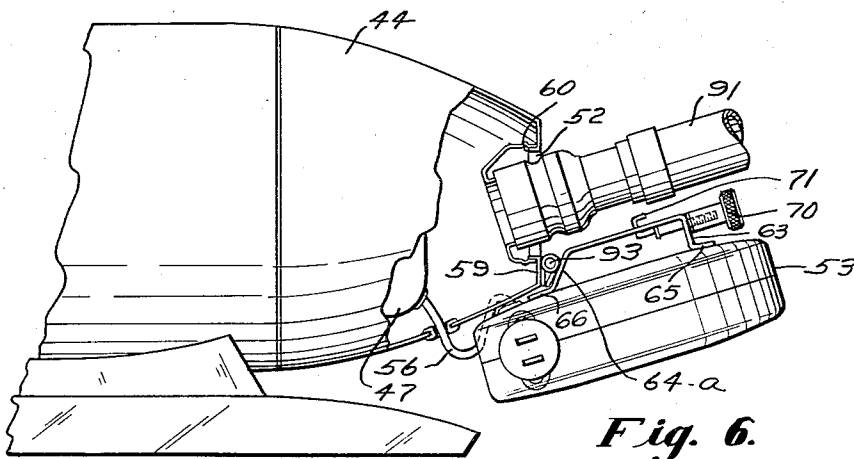
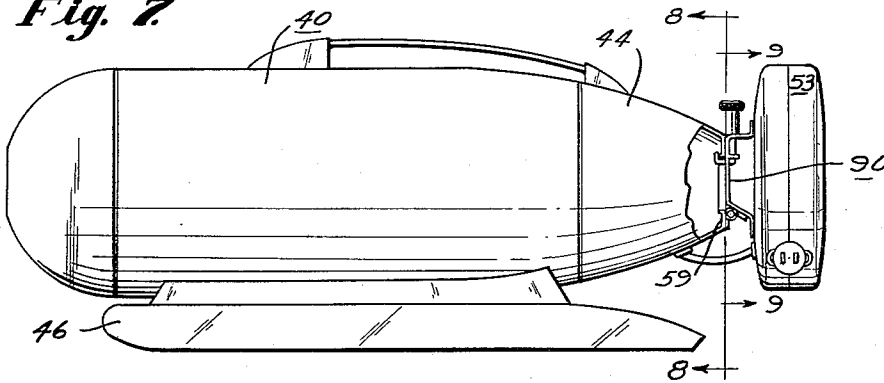


Fig. 6.

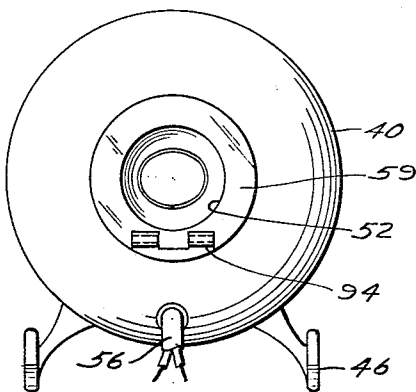


Fig. 8.

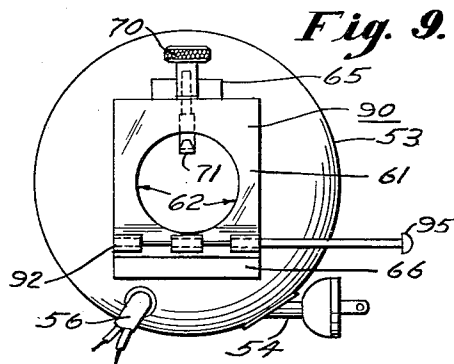


Fig. 9.

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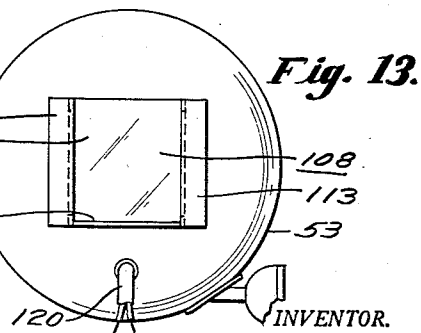
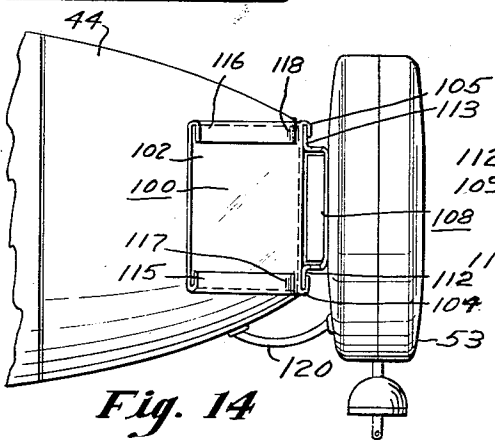
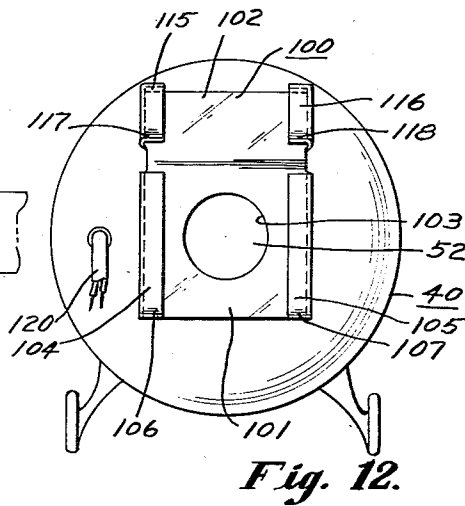
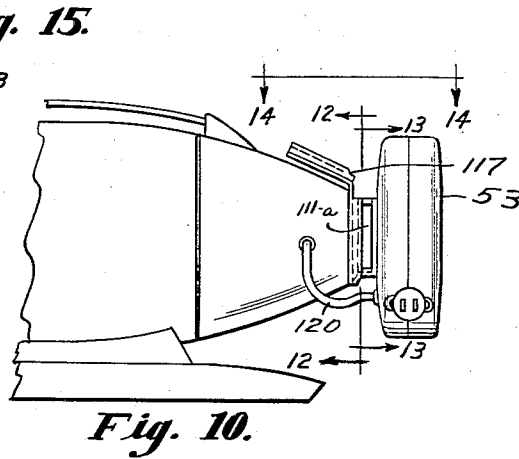
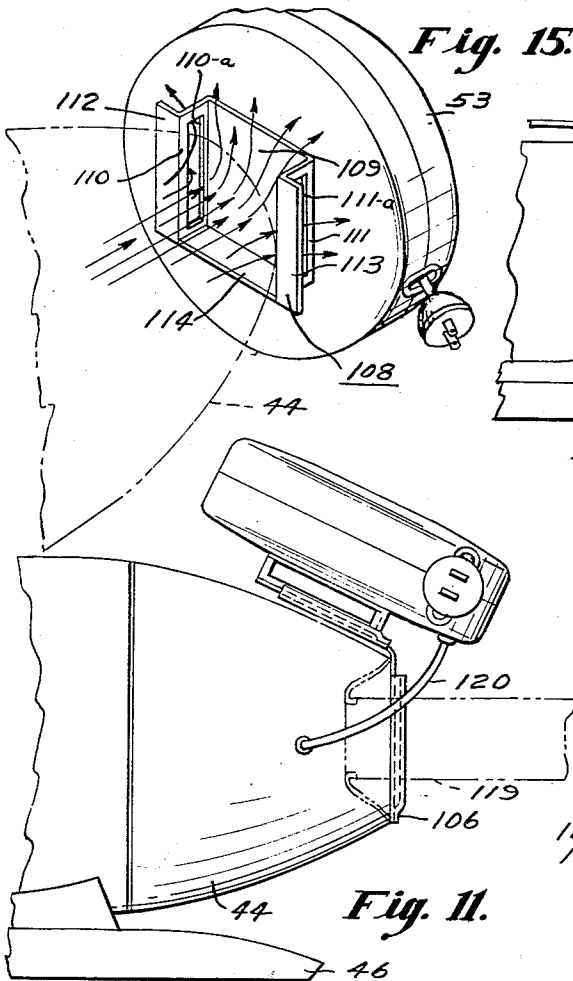
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Fig. 16.

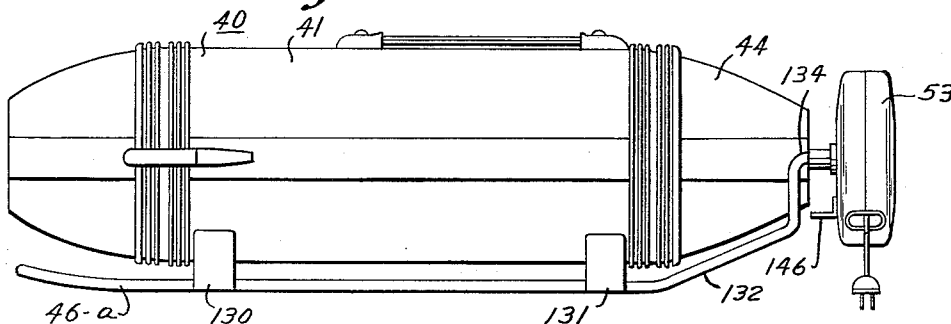


Fig. 17.

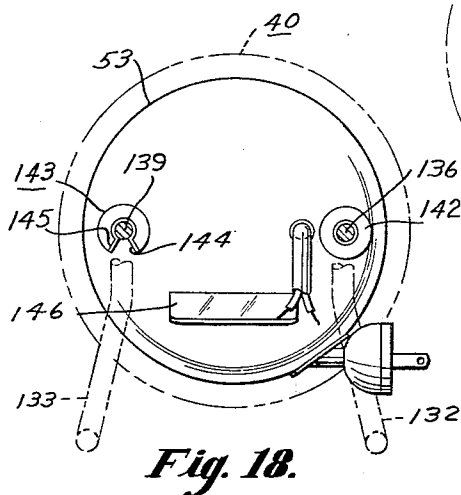
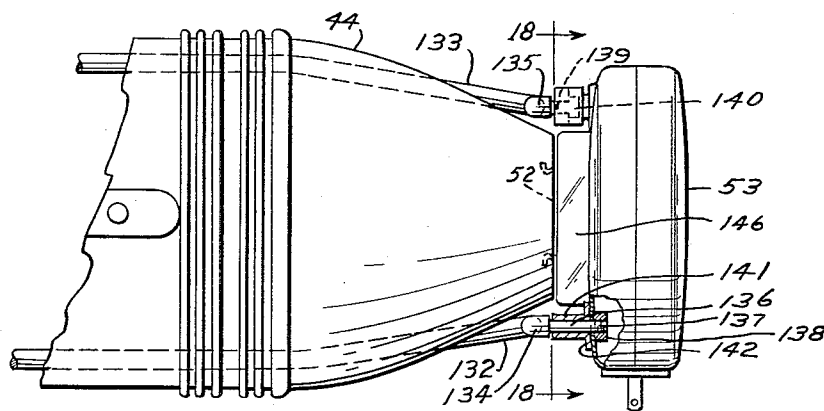


Fig. 18.

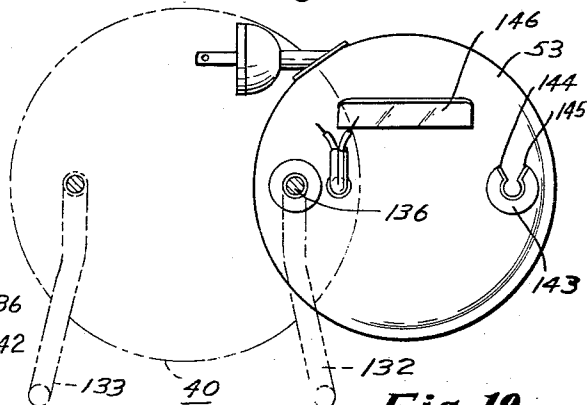


Fig. 19.

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Fig. 24.

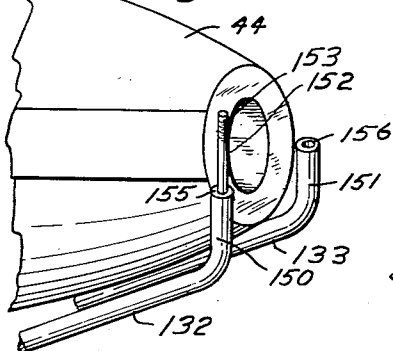


Fig. 20.

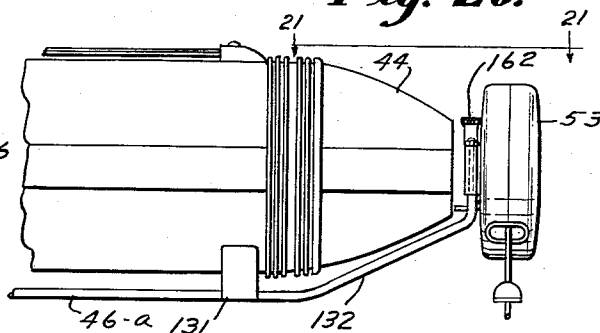


Fig. 22.

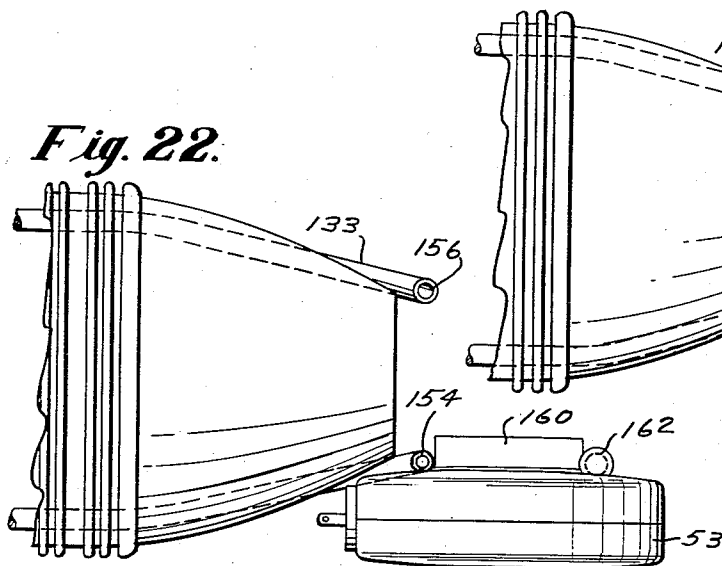


Fig. 21.

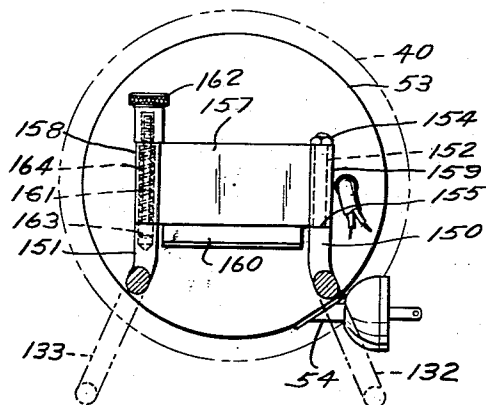
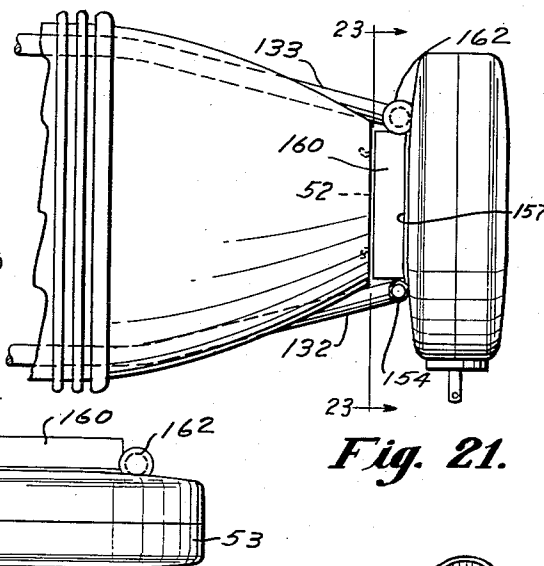


Fig. 23.

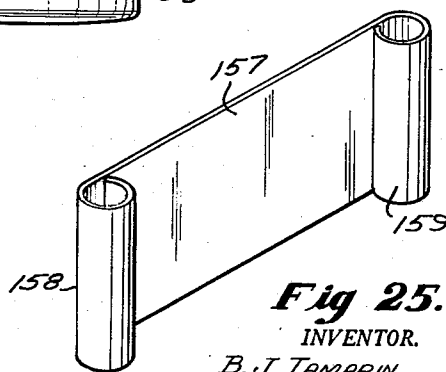


Fig. 25.

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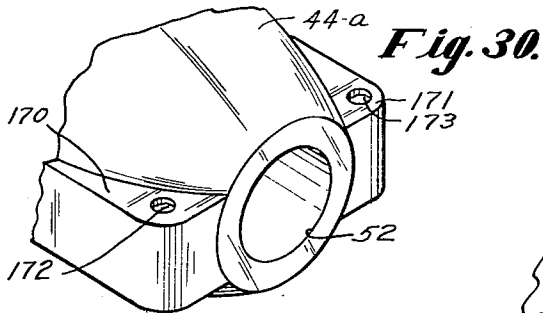


Fig. 30.

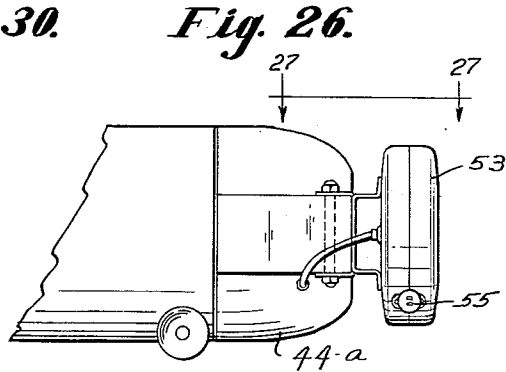


Fig. 26.

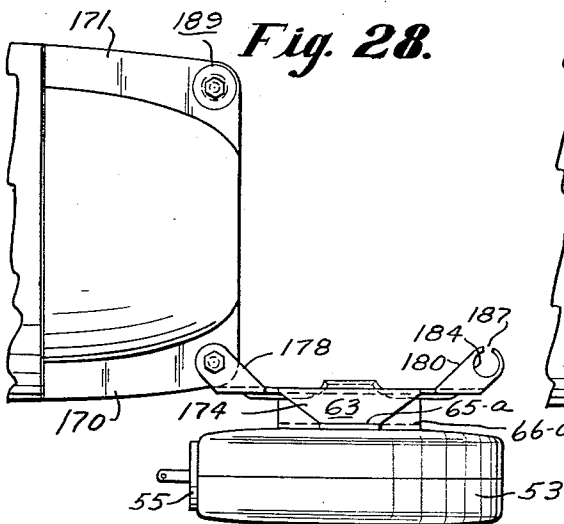


Fig. 28.

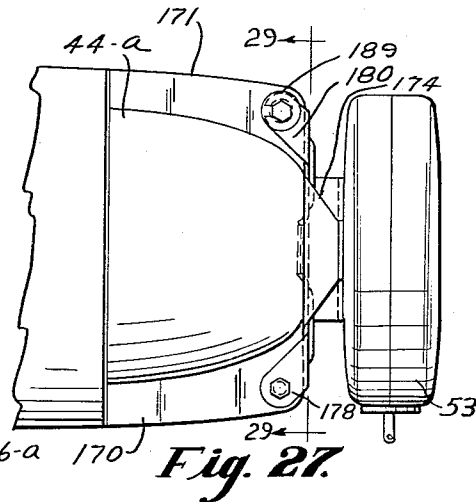


Fig. 27.

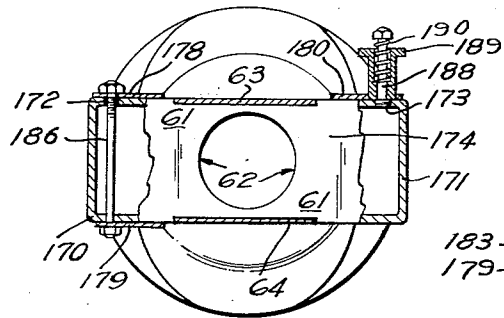


Fig. 29.

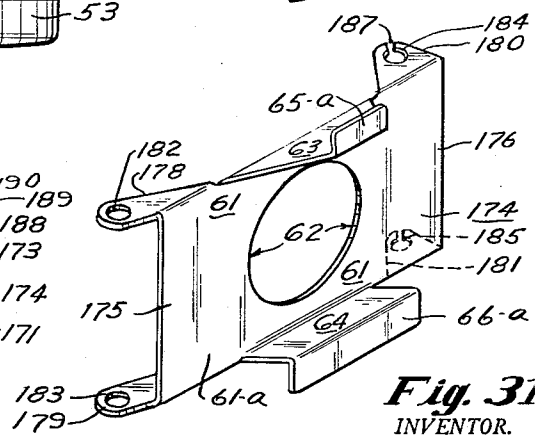


Fig. 31.

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VACUUM CLEANER WITH ELECTRIC CORD-REEL ATTACHMENT

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Application July 27, 1949, Serial No. 107,091

33 Claims. (Cl. 15—323)

The present invention relates to electric cord-reels adapted to be operatively mounted upon and exteriorly of the discharge ends of the torpedo type vacuum-cleaners, upon which cord-reels a quantity of electric cord is secured and stored with the inner ends of the electrical conductors thereof connected to the collector rings or to the brushes of a pair of revolubly related ring-and-brush contacts and from which cord-reel the cord may be dispensed or on which the cord may be wound, at the will of the user, whereby to provide a convenient storage space and dispenser for electric cord.

An object of the present invention is to provide a cord-reel which may be permanently or detachably or displaceably secured to the exhaust-end of a torpedo-type vacuum cleaner in the path of the air-discharge therefrom and spaced from the exhaust-end so as to provide an open air passageway between the cord-reel and the discharge end of the vacuum-cleaner extending transversely of the axis thereof and in free communication with the exhaust-port of the vacuum-cleaner, thereby to baffle and to deflect the discharging air into the space between the discharge end of the vacuum-cleaner and the cord-reel and in a direction transversely of the axis of the discharge port of the vacuum-cleaner.

Another object of the present invention is to provide means to secure an electric cord-reel to the exhaust-end of a torpedo-type vacuum cleaner whereby the stream of air discharged from said vacuum cleaner will be directed away from the floor or other supporting means upon which said vacuum cleaner is resting.

Another object of the present invention is to provide means whereby an electric cord-reel may be operatively and displaceably secured to the discharge end of a torpedo-type vacuum cleaner, without preventing the attachment to said discharge outlet of said vacuum cleaner of a discharge conduit or hose or pipe or the like adapted to carry off the discharge air from said vacuum cleaner.

An additional object of the present invention is to provide a supporting means or bracket which may be secured to an electric cord-reel so as to permit said cord-reel to be secured in operative relation to a torpedo-type vacuum cleaner without interfering with the operation of said vacuum cleaner or said cord-reel; said supporting means or bracket being adapted for easy and ready maneuverability with respect to said vacuum cleaner whereby said cord-reel may be moved, relative to the discharge end of said vacuum cleaner, when it is desired to attach a blow-hose to the discharge port.

Another object of the present invention is to provide an electric cord-reel upon the discharge end of a torpedo type vacuum-cleaner, so mounted thereon as to provide a supporting base for the vacuum-cleaner in an up-ended position of the vacuum-cleaner, when the vacuum-cleaner is not in use, as, for instance, when the hose is detached therefrom and the vacuum-cleaner is stored in a closet or the like.

The torpedo-type vacuum cleaner contemplated by the present invention generally includes an elongated and

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generally cylindrical body-portion having an intake end and a discharge end and means such as an electric motor and an air-mover such as a fan or impeller, disposed within said body portion to create a vacuum at the intake end and to discharge the air under pressure at the discharge end, whereby to draw air through said cylinder, and means within said cylinder to entrap dirt or dust particles carried by the air and to discharge, through the discharge end of said cylinder clean, filtered air, leaving behind, within the cylinder, the dirt or dust removed from said air. The torpedo-type vacuum cleaner contemplated in the present invention may be similar to those described in my U. S. Patents Nos. 2,292,250; 2,314,177 and in U. S. Patents 2,323,275 and 2,322,038 to Lofgren, and I refer to these disclosures only by way of illustration, and do not mean to limit myself to any specific construction of torpedo type vacuum cleaner.

The cord-reel or take-up reel contemplated by the present invention generally comprises a flat circular housing within which a spring-wound reel is rotatably disposed and upon which reel a suitable length of electric cord may be wound with one end of said cord extending beyond said housing and with the other end of said cord operatively connected to slip-rings or brush-contacts or the like. A plurality of contacts (engaging said slip-rings) are connected to an electric cord non-rotatably secured to the said housing, said non-rotatable cord connected to the vacuum cleaner motor.

By way of example, I refer to U. S. Patents Nos. 2,391,840, 2,159,004, 1,484,681, 1,551,856, 1,902,593, 2,443,701, 2,521,178 and 1,648,948 to illustrate electric cord-reels contemplated by the present invention, and do not mean to restrict my disclosure to any specific form of electric cord-reel construction.

For the purpose of illustrating the invention, there are shown in the accompanying drawings forms thereof which are at present preferred, although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized and that the invention is not limited to the precise arrangements and organizations of the instrumentalities as herein shown and described.

Referring now to the drawings wherein like reference characters indicate like parts,

Figure 1 represents a perspective view of a torpedo-type vacuum cleaner with a cord-reel attached thereto, representing one embodiment of the present invention.

Figure 2 represents a side-elevational view of a torpedo type vacuum cleaner similar to that shown in Figure 1, with a cord-reel and reel-mounting means affixed thereto, representing the same embodiment of the present invention as shown in Figure 1.

Figure 3 represents a vertical cross-sectional view of the embodiment shown in Fig. 2.

Figure 4 represents a perspective view of the reel-mounting means shown in Figures 1-3, inclusive, shown detached from the cord-reel and from the vacuum cleaner.

Figure 5 represents a digrammatic perspective view of the air-flow from the discharge end of a torpedo-type cleaner when cord-reel and mounting means of the embodiment of Figures 1-4, inclusive, are applied thereto.

Figure 6 represents a side-elevational view, partly in section, of a cord-reel non-detachably but pivotly secured to the discharge end of a torpedo-type vacuum cleaner, with the mounting means for said reel partly disconnected from the discharge end of said vacuum cleaner and with a discharge conduit or hose connected thereto.

Figure 7 represents a side-elevational view, partly in section, of the cord-reel and mounting means shown in the embodiment of Figure 6 with the cord-reel and

mounting-means fully secured in interlocked relationship with the discharge end of said vacuum cleaner.

Figure 8 represents an end elevational view generally along lines 8—8 of Figure 7.

Figure 9 represents an end elevational view of the cord-reel and mounting-means shown in the embodiments in Figures 6-8 inclusive taken generally along lines 9—9 of Figure 7.

Figure 10 represents a side-elevational view of the rear-end of the torpedo type vacuum cleaner and another embodiment of a reel-attaching means adapted to support a cord-reel upon said vacuum cleaner.

Figure 11 shows an elevational view of the rear-end of a torpedo type vacuum cleaner, similar to that shown in Figure 10, but with the mounting-means of the embodiment of Figure 10 supporting the cord-reel in its alternate position on the rear end of the vacuum cleaner, and with a discharge conduit or hose secured to the discharge end of the vacuum cleaner (as shown in dash-dot lines).

Figure 12 represents an end elevational view of the vacuum cleaner and mounting-means of embodiment shown in Figures 10 and 11, taken generally along lines 12—12 of Figure 10.

Figure 13 represents an end elevational view of the cord-reel and mounting-means of the embodiments shown in Figures 10-12 inclusive, taken generally along lines 13—13 of Figure 10.

Figure 14 represents a top plan view of the rear end of the vacuum cleaner of the embodiment shown in Figures 10-13 inclusive shown with the cord-reel in the supporting position disclosed in Figure 10 and taken generally along line 14—14 of Figure 10.

Figure 15 represents a perspective diagrammatic view of the flow of air from the discharge end of a torpedo type vacuum cleaner including the reel-mounting means disclosed in Figures 10-14 inclusive.

Figure 16 represents still another form of torpedo type vacuum cleaner with a cord-reel secured at the discharge end thereof, representing still another embodiment of the present invention.

Figure 17 represents a top plan view, partly in section, of the rear-end of the torpedo-type vacuum cleaner and cord-reel shown in Figure 16, with the mounting means shown in Figure 16 shown partly in section.

Figure 18 represents an elevational view, partly in section, the mounting means and cord-reel of Figures 16 and 17, taken generally along lines 18—18 of Figure 17.

Figure 19 represents an elevational view, similar to Figure 18, of the cord-reel and mounting-means shown in Figures 16-18, inclusive, showing the cord-reel pivoted about the reel-mounting means whereby to remove the cord-reel from a position behind the discharge outlet of the vacuum cleaner.

Figure 20 represents an elevational view at the rear end of a torpedo-type vacuum cleaner, similar to that shown in Figure 16, showing still another embodiment of the present invention.

Figure 21 represents a top plan view generally along lines 21—21 of Figure 20.

Figure 22 represents a top plan view of the embodiment of Figures 20 and 21, similar to that shown in Figure 21 but showing the cord-reel pivoted 90 degrees about its supporting-means so as to move said cord-reel away from the discharge opening or discharge end of said vacuum cleaner.

Figure 23 represents an elevational view, partly in section of the cord-reel and reel-supporting means of Figures 20-22, inclusive, taken generally along lines 23—23 of Figure 21.

Figure 24 represents a rear perspective view of the reel-supporting means disclosed in the embodiment of Figures 20-23, inclusive.

Figure 25 represents a perspective view of the cord-

reel support-bracket of the embodiment of Figures 20-24 inclusive.

Figure 26 represents an elevational view of the rear-end of still another embodiment of torpedo-type cleaner with reel-supporting means connecting a cord-reel to said vacuum cleaner.

Figure 27 represents a top plan view taken generally along lines 27—27 of Figure 26.

Figure 28 represents a top plan view similar to Figure 27 but showing the cord-reel and the reel-supporting means of Figure 27, pivoted 90 degrees about one of its supporting members so as to remove said reel from behind the discharge end of said vacuum cleaner.

Figure 29 represents an end-elevational view, partly in section, of the discharge end of the vacuum cleaner shown in the embodiment of Figures 26-31, inclusive, partly in section, showing the releasing mechanism which permits the reel and mounting means to be pivoted away from the discharge end of said vacuum cleaner.

Figure 30 represents a perspective view of the discharge end of the vacuum cleaner shown in the embodiment of Figures 26-31, inclusive, more clearly to reveal the portions on said housing which support the reel-mounting means of this embodiment.

Figure 31 represents a perspective view of the reel-mounting bracket shown in the embodiment of Figures 26-31, inclusive.

In the embodiment of Figures 1-5 inclusive there is shown a reel-supporting means for detachably securing a cord-reel to the discharge end of a torpedo-type or tank-type vacuum cleaner. The vacuum cleaner 40 comprises a generally cylindrical body-portion 41 having a nose-portion or front end 42 secured thereto to which front end or intake end a section hose (not shown) may be secured through the opening 43 therein. The rear or discharge end of the vacuum cleaner has a frusto-conical shaped cover-portion 44 secured to the body portion 41.

The forward end 42, body portion 41, and rear-end 44 form a generally integral unit containing the suction fan, collection bag, motor unit and other component parts comprising the generally standard tank-type vacuum cleaner.

To the body portion 41, a carrying handle 45 may be secured by which the vacuum cleaner may be carried, and also includes a plurality of supports or legs 46 upon which the vacuum cleaner may be placed when not being transported and which may support the vacuum cleaner with the axis of said vacuum cleaner generally parallel with the plane of the supporting surface.

Within the body portions 41, 42 and 44, an electric motor 47 is disposed, to which a rotary fan may be operatively connected so as to create a vacuum within the intake chamber 48 (behind the front opening 43) and discharge the air through the discharge conduit or chamber 49. Appropriate electrical connections 50 may be made between the motor 47 and a connector plug 51 secured to the housing 44, generally at the rear of the vacuum cleaner. By making appropriate electrical connections to the plug 51, the motor 47 is caused to operate and a flow of air drawn through the vacuum cleaner from the intake opening 43 through the passageways 48 and 49 and discharged through the rear or discharge opening 52 in the housing portion 44.

A cord-reel 53 having an extensible cord 54 disposed therewithin in such a manner whereby the cord 54 may be lengthened or shortened, as desired, is secured at the rear end of the vacuum cleaner, as will be hereinafter described. The cord 54 may have electrical contacts within the body of the cord reel 53, adapted to make moving electric contact with suitable connector brushes (not shown); said brushes generally non-rotatably secured to a support 55 and electrically connected to the wire or electric cord 56. In this manner electric current may be supplied through the cord 54 and transmitted

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through the connector 55 to the cord 56 which, in turn, may be connected through the plug 57 to the connector 51 on the housing portion 44.

The cord-reel 53 provides means to supply electric current through the wires 54 and 56 to the wire 50 and thus to energize the motor 47 and operate the vacuum cleaner without having an unsightly and unmanageable length of cord 54 strewn about the work-area in which the vacuum cleaner is to be operated and which permits the cord to be collected in or dispensed from the cord-reel 53 as the vacuum cleaner (with the cord-reel 53 connected thereto) is moved toward or away from the source of electrical energy to which the cord 54 is connected.

The cord reel 53 may be similar to the cord-reel disclosed in U. S. Patents Nos. 2,391,840; 2,159,004 or 1,648,948, but these references are cited only to illustrate the general type of cord-reel contemplated by the present invention.

The support-member of bracket 58 permits the cord-reel 53 to be secured to the vacuum cleaner 40 without interfering with the discharge of the compressed air through the discharge chamber 49 and discharge opening 52.

As is shown particularly in Figure 3, the housing member 44, generally frusto-conical in shape, converges at the rear end thereof and terminates in a transverse flange 59 which may have an in-turned end 60 forming the discharge opening 52 at the rear end of the housing member 44.

The discharge opening 52 is usually circular in shape so as to receive therewithin, if desired, a discharge conduit or hose (not shown) through which the discharged compressed air may be blown and carried away from the vicinity of the vacuum cleaner 40 and thus prevent it from being discharged directly to the atmosphere through the discharge opening 52.

The supporting-member or bracket 58 which adapts the cord-reel 53 so as to be supported at the rear end of the vacuum cleaner 40 upon the discharge opening 52 is shown more clearly in Figure 4. This bracket or supporting member 58 includes a body portion 61 having a generally circular opening 62 therein which is approximately the same size as (or larger than) the discharge opening 52. The body portion 61 has a plurality of angularly disposed, integrally formed extensions 63 and 64 disposed at the upper and lower ends thereof, respectively. The extensions 63 and 64, in turn, have terminal-portions or reel-contacting portions 65 and 66, respectively, which are adapted to fit against one side of the cord-reel 53 and to be secured thereto either by soldering or welding, or by riveting or by screws or the like, shown at 67 and 68 in Figure 3.

Along one arcuate lower-portion of the edge of the opening 62, an integral lip 69 is formed of an appropriate size and shape so as to inter-engagingly contact the edge 60 of the opening 52 in the transverse end portion 59 of the outer portion 44 of the vacuum cleaner 40. The lip 69 may be arcuate both in transverse and longitudinal directions so as conveniently to fit over the edge 60 and to permit the bracket 58 to be supported upon the opening 52, along a portion of its lower edge 60.

In order to prevent the bracket 58 from falling away from the opening 52 at the upper edge and secure it to the body-portion 44, an adjustable thumb-nut 70 and locking-finger 71 are operatively disposed along the upper edge of the body portion 61 and the extension 63, in adjustable relation thereto, whereby the hooked shaped portion 72 of the finger 71 may be engaged behind the edge 60 of the opening 52 and securely clamped thereagainst to lock the bracket member 58 in immovable relationship with the body-portion 44 of said vacuum cleaner.

As is shown more clearly in Figures 3 and 4, the locking device includes the threaded thumb nut 70 operatively

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disposed upon the threaded end 73 of the finger 71 so as to draw the hooked end 72 of the finger 71 against the edge 60 of the opening 52 when the thumb nut 70 is turned upon the threaded portion 73. A locking nut 74 prevents the thumb nut 70 from being completely disengaged from the threaded portion 73, and a compression spring 75 urges the hooked end 72 of the finger 71 against the edge 60.

The finger 71 is supported at its upper end in the hole 76 in the extension 63, and near its lower end in the apertured tab-like portion 77 protruding from the body portion 61 near the upper edge of the opening 62 therein.

A plurality of guide tabs 78 may be angularly disposed in relation to the body portion 61 (on the same side thereof as the lip portion 69) so as to guide the bracket 58 into juxtaposition with the discharge opening 52 when assembling the cord-reel 53 and the bracket 58 to the vacuum cleaner 40.

In addition, a plurality of tabs 79 and 80 may be angularly disposed in relation to the body portion 61 so as to contact the outer surface of the body portion 44 and generally prevent the rotation of the cord-reel 53 and the bracket 58 in relation to the body portion 44. If desired, the body portion 44 may have a plurality of recesses or shoulders disposed therein adapted to engage the tabs 79 and 80 to securely inter-engage the bracket 58 and the body portion 44 and prevent relative rotation of these two parts.

The operation of the embodiment of Figures 1-5 is as follows. The bracket 58 may be secured to the housing of the cord-reel 53, as by the rivets or screws 67 and 68, and in such manner may be supplied to any owner or user of a vacuum cleaner having a discharge opening 52 adapted to receive the contact portions of the bracket 58. To assemble the reel 53 (and the bracket 58 attached thereto) to the discharge opening 52, the thumb nut 70 is unscrewed from the threaded portion 73 so as to move the hook portion 72 away from the upper edge of the opening 62 in the body portion 61; that is, to move the hooked portion 71 towards the center of the opening 62. When the thumb nut 70 is unscrewed the spring 75 generally urges the thumb nut 70 and the thread portion 73 away from the center of the opening 62, but a downward push on the thumb nut 70 will compress the spring 75 and bring the hooked portion 72 toward the center of the opening 62, and in this position the lip 69 may be fitted over the edge 60 of the opening 52 and the body-portion 61 pivoted (about the lip 69) so as to bring the tabs 78 into the opening 52 and to bring the hook 72 of the finger 71 inside the opening 52. Then the downward pressure on the thumb nut 70 may be released and the spring 75 will force the hook 72 behind the upper edge of the opening 52 and engage bracket 58 in the opening 52. The thumb nut 70 may be screwed down against the upper surface of the extension 63 and securely lock the hook 72 behind the edge 60 of the opening 52.

In order to remove the cord-reel and the bracket from the discharge opening 52, it is necessary only to unscrew the thumb nut 70, press down thereupon and disengage the hook 72 from the edge 60 of the opening 52, pivot the upper end of the reel 53 outwardly (away from the housing 44) about the lip 69, until the hook 72 clears the edge 60 of the opening 52, and then lift the lip 69 from the lower portion of the edge 60. This leaves the opening 52 free to receive a discharge conduit or hose therein if such is desired.

It will be noted, with particular reference to Figures 3, 4 and 5, that the cord-reel 53 is supported behind the discharge opening 52 a substantial distance. This permits the discharged compressed air to pass through the opening 52 without encountering any resistance to the flow thereof. The extension 64 extends across the entire width of the opening 52 (and, indeed, somewhat therebeyond), so that the discharged compressed air is prevented from flowing downwardly between the cord-

reel 53 and the housing portion 44, and this baffle plate or extension 64 thus prevents the discharged air from disturbing any dust or dirt disposed along the supporting area upon which the vacuum cleaner 40 is resting. The expelled air will be discharged laterally, as shown in Figure 5, and may also be discharged partially upwardly since the angularly disposed edges of the extension 63 provide a small upper opening. The area of the discharge opening formed between the cord-reel 53 and the body portion 61 of the bracket 58 is somewhat in excess of the area of the discharge opening 52, so that there will be no tendency to retard the discharged air as it passes out of the opening 52.

The flow control feature of the supporting bracket of the present invention is highly desirable inasmuch as it prevents the discharge of air against the supporting surface, which would create a storm of dust disposed upon the supporting surface, all to the discomfort and discontent of the person using the vacuum cleaner. With the present invention, the air is discharged laterally and upwardly where it creates no disturbance of the dust upon the supporting surface.

Moreover, because the cord-reel 53 is disposed directly behind the discharge opening 52, the discharged air from the opening 52 is prevented from flowing rearwardly of the vacuum cleaner 40 in a concentrated vortex or stream, but is diffused and discharged on three sides of the opening 52 thus preventing any concentrated stream of air from flowing rearwardly of the vacuum cleaner and disturbing any drapes, curtains or dusty surfaces which may be disposed to the rear of the vacuum cleaner.

The supporting member of the embodiment shown in Figures 1-5, inclusive, is particularly desirable because it permits a standard hose-reel of the type disclosed in U. S. Patents 2,391,840, 2,159,004 or 1,648,948 to be attached to a standard torpedo-type vacuum cleaner by the user or purchaser of said vacuum cleaner and does not require any complicated or technical adjustments to permit the reel to be used with the vacuum cleaner. Moreover, the reel may be detached easily from the vacuum cleaner, when such is desired, to permit the vacuum cleaner to operate as an air compressor, if desired, or permit the discharged air to be conducted through a conduit to an appropriate place remote from the discharge end of the vacuum cleaner.

When the cord-reel 53 is removed from the discharge opening 52, so that the discharge conduit (not shown) may be attached to the opening 52, the cord-reel 53 may be placed on the supporting surface directly adjacent the body portion 44 (with the cord 56 and the plug 57 connected to the connector 51) thus permitting the vacuum cleaner to function regardless of the fact that the cord-reel has been disconnected from the supporting portion of the vacuum cleaner housing 44.

With reference now to Figures 6-9, inclusive, there is shown a modified embodiment of the support-member or bracket disclosed in Figures 1-5.

The modified bracket 90 supports a hose-reel 53 at the rear-end of the body portion 44, adjacent the discharge opening 52, in a generally permanent relationship thereto, although permitting the hose-reel 53 to be moved from juxtaposition with the discharge opening 52 to permit a discharge conduit or hose 91 to be secured in the discharge opening 52, when such is desired.

The bracket 90 is similar in construction to the bracket 58 except that the lip 69 and the tabs 78, 79 and 80 are not formed in the body portion 61. In addition, the extension 64-a is not disposed at right angles to the body portion 61 but is disposed at a lesser angle; generally about 45 degrees thereto. These modifications appear more clearly in Figures 6 and 7.

To the extension 64-a is secured one-half 92 of a hinge-member 93. The hinge portion 92 may be secured to the extension 64-a as by spot-welding or any other convenient method.

To the transverse end portion 59 of the body portion 44 a mating hinge-member 94 may be secured (as by spot-welding or otherwise) in such a fashion that when the two hinged portions 92 and 94 are interconnected (as by the pivot pin 95) and the cord-reel 53 is adjusted so that its axis is generally in line with the axis of the vacuum cleaner with the hook 72 secured behind the lip 60 of the opening 52 (as is shown more specifically in Figure 7), then the opening 62 in the body portion 61 of the bracket 90 will be in alignment with the discharge opening 52 in the body portion 44.

When it is desired to connect the discharge conduit or hose 91 in operative relation with the discharge opening 52 (as is shown more clearly in Figure 6) the hook 72 is disconnected from the edge 60 of the discharge opening 52 so that the cord-reel 53 is permitted to pivot about the pin 95 on the hinge 93 and assume a position generally shown in Figure 6. In this position the discharge opening 52 is exposed to view and the discharge conduit 91 can be attached therewithin in any appropriate or suitable manner customary for the type of vacuum cleaner to which the cord-reel 53 and support-member 90 are secured.

The embodiment shown in Figures 6-9 generally will be used when the assembly is to be a permanent one, with the cord-reel attached during the construction of the vacuum cleaner. The pivot pin 95 may be riveted into place and the cord 56 may be connected directly to the motor 47 without having a make-and-break connection such as shown in Figure 2, comprising the plug-portions or connectors 51 and 57. The cord-reel and cleaner shown in Figures 6-9 inclusive are to be construed as a unitary structure and the cord-reel and vacuum cleaner will be sold as a single unit, rather than separately as in the case of the embodiment shown in Figures 1-5 inclusive.

However, the operation of the embodiment shown in Figures 6-9 inclusive (except for the removal of the cord-reel) is the same as shown in Figures 1-5, particularly with reference to the use of the bracket 90 and cord-reel 53 as a baffle to diffuse the discharged air upwardly and laterally rather than directly to the rear or down against the cleaner-supporting surface.

The embodiment of the present construction shown in Figures 10-15 inclusive is also adapted to position the cord-reel 53 in juxtaposition to the discharge opening 52 at the rear end 44 of the vacuum cleaner housing.

The bracket 100 shown in the embodiment of Figures 10-15 generally includes a first body portion 101 and a second body portion 102 angularly disposed in relation to the first body portion and integral therewith. The body portion 101 has an opening 103 therein which is adapted to be aligned with the discharge opening 52 of the housing portion 44, and is somewhat larger than the discharge opening 52. The body portion 101 is adapted to be secured to the end-portion or flange 59 at the rear-end of the body portion 44, and this may be done either by riveting or welding or otherwise securing the body portion 101 to flange 59, as is shown particularly in Figures 11 and 12.

The body portion 101 has a pair of flanges 104 and 105 formed along the left and right vertical edges thereof, respectively, adapted to provide grooves or guide channels between the flanges 104 and 105 and the body portion 101. These grooves are shown more clearly in the top plan view of Figure 14. The lower edges 106 and 107 of the flanges 104 and 105 may be crimped or otherwise flattened against the body portion 101, as is shown in Figure 11, so as to close off the lower end of the channel and to provide a stop-portion therein.

The supporting bracket 108, shown clearly in perspective in Figure 15, has a main body portion 109 adapted to be welded or otherwise secured to one surface of the housing of the cord-reel 53. The main body portion 109 has a plurality of flanges 110 and 111 protruding therefrom at right angles and integral therewith,

said flanges 110 and 111 terminating in angularly disposed ends 112 and 113 respectively. A bottom flange 114 protruding at right angles to the body portion 109 and at right angles to the flanges 110 and 111 completes the box-like construction of the supporting bracket 109.

With reference to Figure 14, it is seen that the flanges 112 and 113 are so dimensioned and positioned as to slide readily into the grooves formed by the flanges 104 and 105 of the body portion 101, thus permitting the cord-reel 53 to be secured by the bracket 109 in juxtaposition to the discharge opening 52, in a manner similar to the support for the cord-reel 53 heretofore described.

As shown in Figure 15, the box-like structure formed of the flanges 110, 111 and 114 serves to direct the air upwardly and laterally from the discharge opening 52. The air is discharged laterally through the apertures 110-a and 111-a in the flanges 110 and 111 respectively. The area of the openings at the top of the bracket 109 and the area of the apertures 110-a and 111-a in the flanges 110 and 111 should be in excess of the area of the discharge opening 52 to prevent any back pressure in the discharge passageway 49.

The body portion 102 also has a plurality of flanges 115 and 116 along the generally vertical edges thereof; said flanges 115 and 116 being crimped at the lower end as at 117 and 118 to form a second pair of guide-grooves into which the flanges 112 and 113 may be inserted. The cord-reel 53 may be removed from juxtaposition with the discharge opening 52 and supported in the grooves formed by the flanges 115 and 116 (as is shown more clearly in Figure 11). When the cord-reel 53 is supported on the body member 102, the discharge opening 52 is free to receive the discharge conduit 119 therewithin.

In the embodiments of Figures 10-15 inclusive, the electrical cord 120 is generally permanently connected between the cord-reel 53 and the electric motor (not shown) within the housing of the vacuum cleaner 40. In this fashion the cord-reel 53 is adapted to be sold and used as an integral part of the vacuum cleaner, and as such, is adapted to be completely assembled at the factory and sold as a unit. However, the cord 120 may have a detachable connector (such as the connector 57) secured at one end thereof, adapted to make connection with a mating plug or connector (like the connector 51) attached to the body portion 44 of the vacuum cleaner. If such assembly is contemplated, the cord-reel might be sold as a unit separate and distinct from the vacuum cleaner, per se, and the cord-reel might be purchased and assembled and connected to the vacuum cleaner by the owner or user without the necessity of any technical or complicated factory-type assembly.

With reference to Figures 16-19 inclusive, there is shown still another embodiment of the present invention whereby the cord-reel 53 may be mounted in axial alignment and in operative juxtaposition to the discharge end 44 of the tank-type or torpedo-type vacuum cleaner 40. In the construction of the cleaner shown in Figures 16-19 inclusive, and particularly Figure 16, the guides 46-a which support the cleaner 40 upon the supporting surface such as the floor or the like, may be secured to the body portion 41 as by the brackets 130 and 131, and may be tubular or rod-like portions which form runners or anti-friction members upon which the cleaner 40 may be supported or pulled across the supporting surface. The rearward extensions 132 and 133 of the guides 46-a may extend upwardly and rearwardly and inwardly toward the discharge end 44 of the cleaner 40, terminating in horizontally extending end-portions 134 and 135 respectively which are disposed generally parallel to the axis of the vacuum cleaner, particularly at its rearward end, and at the same horizontal level at the axis of the discharge portion 44 of the cleaner.

The horizontal end-portion 134 may have a reduced diametered portion 136 terminating in a threaded end

137 which a nut 138 is adapted to engage. The horizontal end-portion 135 terminates in a reduced diametered portion 139 having a headed portion 140 thereon.

To the body portion of the cord-reel 53 and near the edge thereof, a bearing-bushing 141 is secured to the body of the cord-reel by the flange 142, as by spotwelding or soldering or otherwise securing the flange to the body-portion. The bearing-bushing 141 has an internal diameter adapted slidably and rotatably to fit over the reduced diametered portion 136 of the horizontal end-member 134, after which the nut 138 may be turned upon the threaded portion 137 to secure the bushing 141 (and the cord-reel 53 secured thereto) rotatably upon the reduced diametered portion 136.

At the opposite side of the housing of the cord-reel 53, a spring-clip or C-washer 143 is secured in such a position that the spring-tabs 144 and 145 of the clip 143 may slip over the reduced diametered portion 139 of the horizontal end-member 135 behind the head 140 thereof. In this manner the cord-reel 53 may be supported on the horizontal members 134 and 135 with the axis of the cord-reel 53 generally in line with the axis of the vacuum cleaner, to act as a baffle and prevent discharge of an axial stream rearwardly from the cleaner.

Moreover, an angle bracket 146 may be secured to the housing of the cord-reel 53 (generally below the discharge opening 52) when the cord-reel 53 is operatively connected to both of the horizontal support members 134 and 135. This bracket 146 prevents the discharge of air downwardly from the rear of the vacuum cleaner while yet permitting the air to be discharged laterally and upwardly, all for the purpose heretofore described.

When it is desired to make an operative connection between a discharge conduit or hose and the discharge opening 52, the C-washer may be lifted from the horizontal support 135 and the cord-reel 53 pivoted about the horizontal support 136, as is shown more particularly in Figure 19. This exposes the discharge opening 52 and permits the ready attachment of a discharge conduit or hose thereto, as all heretofore described. I do not mean to limit myself to the spring-type C-washer used to make connection between the horizontal support 135 and the cord-reel 53, inasmuch as any detachable connection may be used to support one end of the cord-reel upon the horizontal support 135 in such a manner whereby the cord-reel 53 may be pivoted about the support 136 so as to expose the discharge opening 52 when desired.

With reference now to Figures 20-25 inclusive there is shown another embodiment of the invention used to secure a cord-reel 53 near the discharge end 44 of the vacuum cleaner 40, which is similar in its construction to the embodiment shown in Figures 16-19 inclusive. Thus, the vacuum cleaner 40 shown in Figures 20-24 is similar to that shown in Figures 16-19, being supported upon a plurality of guides or runners 46-a connected to the body portion of the cleaner as by the brackets 130 and 131. The guides 46a terminate in rearward, upward and inwardly extending portions 132 and 133 having their terminal ends vertically disposed as at 150 and 151. The vertical extensions 150 and 151 extend axially beyond the discharge opening 52, and are disposed parallel to each other and an equal distance from the axis of the cleaner.

The vertical portion 150 has a reduced diametered portion 152 terminating in a threaded end 153 which is adapted to receive lock-nut 154 thereupon. The terminal portion 151 extends no higher than the shoulder 155 between the portions 152 and 150 and has therein a hole 156.

A bracket 157 is secured to the housing of the cord-reel 53, as by riveting or welding or any other fashion, and has, at either end thereof, bearing-bushings 158 and 159 formed therein. The bearing-portion 159 has an internal diameter adapted slidably to fit over the reduced diametered portion 152 and to be secured thereupon by

the lock-nut 154. In this manner the cord-reel 53 is free to pivot about the vertical extension 150, so as to assume a position generally transverse of the axis of the vacuum cleaner and in a baffle-like relationship thereto (as is shown in Figure 21) or which may be swung away from the discharge end of the cleaner so as to expose the opening 52, as is shown more clearly in Figure 22. An angular baffle-plate 160, similar to the baffle-plate 146 heretofore described, may be secured to the housing of the cord-reel 53 so as to prevent the discharge of air in a downward direction.

In the bearing-portion 158 of the bracket 157 a locking pin 161 having a finger-grip 162 secured at the upper end thereof is adapted to fit with its lower end 63 protruding beneath the lower end of the bearing 158 in such a manner that it may enter the circular hole 156 in the support-member 151 when the bearing 158 and the support 151 are axially aligned. A spring 164 urges the pin 161 into the hole 156 (when the bearing 158 and the support 151 are aligned) so as to prevent the accidental dislodgment of the pin 161 from the hole 156. However, when it is desired to move the cord-reel 53 to the position shown in Figure 22, it is necessary only to lift the finger-grip 162 so as to draw the end 163 of the pin 161 from the hole 156 thereby permitting the bracket 157 to pivot about the reduced diametered portion 152 of the supporting member 150.

It is obvious that the reduced diameter portion 152, instead of being integral with the supporting member 150, may be screw-threadedly attached thereto (as by insertion into a hole similar to the hole 156 in the opposite supporting member 151) and thus the supporting members 150 and 151 would each terminate at the level heretofore described with respect to supporting member 151. In this fashion the vacuum cleaner in Figures 20-25 inclusive could be supplied without the cord-reel 53 attached thereto and, if desired, the cord-reel 53 could be supplied as a separate unit and easily attached to the vacuum cleaner in Figures 20-25, by inserting a pivot-pin similar to the reduced diametered portion 152 into the supporting member 150, attaching the bracket 157 secured to the cord-reel 53 to this pivot-pin and securing the pivot-pin and bracket together. It is obvious, from the foregoing description, that the assembly of Figures 20-25 could either be a factory-assembled unit or a separate assembly by the user or owner of the vacuum cleaner purchasing the cord-reel as a separate unit and applying it to the supports 150 and 151, as heretofore described.

Figures 26-31 inclusive illustrate an embodiment whereby the cord-reel may be secured to the discharge end of a tank type vacuum cleaner by modifying the body member 44 so that the said body member 44 will provide a support for the mounting bracket secured to the cord-reel 53. As is shown particularly in the perspective view of Figure 30, the tapering end-portion 44-a has a plurality of ears 170 and 171 formed therein, through which the holes 172 and 173 are provided. The supporting members 170 and 171 with the holes 172 and 173 therein are disposed laterally on each side of the discharge opening 52. A bracket 174 may be secured to the cord-reel 53 as by the flanges 65-a and 66-a, similar to the flanges discussed with reference to Figures 1-5 inclusive. The body portion 61-a of the bracket 174 has lateral extensions 175 and 176 therein, in which the upper and lower supporting members or hinge portions 178, 179, 180 and 181 are formed. The hinge-members 178 to 181 inclusive are adapted to fit about the support members 170 and 171 with the holes 182 and 183 in the tabs 178 and 179, respectively, being aligned with the hole 172 in the support 170, and with the holes 184 and 185 in the tabs 180 and 181, respectively, being in alignment with the hole 173 and the support member 171.

A pivot-pin 186 may be passed through the holes 172,

182 and 183, after the bracket 174 and the terminal portion 44-a have been placed in alignment, thus securing one end of the bracket 174 to the discharge portion of the housing 44-a, whereby the bracket (and the cord-reel secured thereto) may pivot about the pivot-pin 186, as is shown more clearly in Figures 27 and 28.

The hole 184 in the tab 180 has a slot 187 therein through which the locking pin 188 (supported in the hole 173) is adapted to pass when the bracket 174 is pivoted about the pivot-pin 186 so as to bring the tabs 180 and 181 into operative juxtaposition with the support member 171. A stop-member 189 is supported on the pin 188 and is urged by the spring 190 toward the upper surface of the supporting member 171 and through the hole 184 in the tab 180 when the hole 184 is in alignment with the hole 173. The enlarged diameter of the locking member 189 prevents the tab 180 from moving out of alignment with the pin 188, until the lock member 189 is lifted, against the pressure of the spring 190, so as to raise it out of the hole 184, thus permitting the bracket 174 to be pivoted about the pivot pin 186 and permitting the slot 187 to pass the pin 188, whereby the cord-reel may be moved to the position shown in Figure 28 from the position shown in Figure 27. This exposes the discharge opening 52, if such is desired.

The vacuum cleaner of Figures 26-31 may be sold separately, without the cord-reel attached thereto, with a discharge housing member 44-a having the support members 170 and 171 and the holes 172 and 173 formed therein. With vacuum cleaner having this discharge housing 44-a, the owner or user could attach a cord-reel 53 with the mounting bracket 174 secured thereto if such is desired merely by bringing the bracket 174 into operative juxtaposition with the support members 170 and 171 and inserting the pivot pin 186 through the holes 182, 183 and 172 and securing the pin therein. In like manner the locking member 189 may be attached to the hole 173 by the pin 188, as heretofore described. In such manner the vacuum cleaner and the cord-reel could be dispensed as separate units, to be attached by the owner or operator of the vacuum cleaner. On the other hand, if the cord-reel and vacuum cleaner were desired to be sold as a unit, having been pre-assembled at the factory, the assembly of the bracket 174 to the supporting members 170 and 171 could be made in a more permanent manner (such as by riveting the pivot pin 186 into place) and, in this manner, the assembly might be contemplated as a single unit including both the vacuum cleaner and the cord-reel.

The bracket member 174 is similar, in its operation, after assembly to the discharge end 44-a of the vacuum cleaner, as is the operation of the bracket 58 described with particular reference to Figures 1-5.

In the embodiments shown in Figures 1-5, 6-9 and 26-31, the bracket or mounting-support is, in each instance, generally U-shaped in cross-section taken on a plane passing through the main body portion 61 and the portions 63-64 and flanges 65-66. Thus, the body portion 61 forms the basal span while the portions 63 and 64 (and 64-a) form the legs of a generally shallow or flat U-shape, while the portions 65 and 66 constitute reel-carrying flanges at the free ends of the legs of the U-shape.

The present invention also serves to provide the vacuum-cleaner with a base at its discharge end, upon which it may be rested or stood in an up-ended position when it is desired to store the vacuum-cleaner. Thus, the generally flat central portion of the outer reel-housing serves as a base upon which the cleaner-and-reel may be stood in a generally vertical position for storing same on a floor area which is comparatively small in contrast to that required for storing the vacuum-cleaner in its horizontal position.

While in the accompanying drawings the torpedo type vacuum cleaner is shown, and while in the following

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claims reference is made to the torpedo type of electric vacuum cleaner, yet the term "torpedo" or the words "torpedo type" as used in the claims is intended to comprehend any type of vacuum cleaner in which the dust and dirt entrained in the intaken air is either filtered out or deposited out of the air by means contained within the vacuum cleaner housing and which therefore does not have a filter bag exteriorly of the vacuum cleaner housing, and from which the discharging air is discharged in a concentrated or directed stream emerging from a discharge port of the vacuum cleaner housing. Thus, the term "torpedo" is intended to include broadly "tank" type vacuum cleaners and all vacuum cleaners which do not have a dust bag exteriorly of the vacuum cleaner housing.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and it is therefore desired that the present embodiments be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

Having described my invention, I claim the following:

1. In combination with a torpedo type electric vacuum-cleaner having an elongated housing containing an electric motor and an air-mover and a dust-collector, and adapted to have its axis rearwardly disposed when in normal use and having a generally horizontally-discharging air-discharge port, an electric cord-reel having stationary electric-terminals adapted to be operatively connected to said electric motor, said cord-reel mounted exteriorly of the housing of said vacuum-cleaner and in juxtaposition to said discharge port and in the path of the air-discharged therefrom and with its major dimension disposed transversely of the axis of said vacuum-cleaner housing and spaced a substantial distance from said discharge-port to provide an air-passageway open to the atmosphere between the cord-reel and the vacuum-cleaner housing transversely of the axes of the vacuum-cleaner and of the cord-reel, said cord-reel including means arranged to baffle at least a major portion of the air discharged from said port and to deflect it in directions transversely of the axes of said vacuum-cleaner and of said cord-reel through the space therebetween, and electric conductors extending from the stationary terminals of said electric cord-reel to the electric-motor of said vacuum-cleaner.

2. The subject matter claimed in foregoing claim 1 but in which the cord-reel is displaceably mounted upon and exteriorly of the housing of the vacuum-cleaner.

3. The subject matter claimed in foregoing claim 1 but in which the cord-reel is detachably mounted upon and exteriorly of the housing of the vacuum-cleaner.

4. The subject matter claimed in foregoing claim 1 but in which a mounting support is operatively interposed between the vacuum-cleaner and the cord-reel, and has a reel receiving and carrying portion and a fastening portion in off-set relation to each other so as to space the cord-reel from the discharge port of the vacuum-cleaner and form said air-passageway therebetween, said fastening portion being adapted for displaceable engagement with the vacuum-cleaner.

5. The subject matter claimed in foregoing claim 4, in which the mounting-support includes aligning means adapted to project into the discharge port of the vacuum-cleaner, thereby to aid in maintaining the mounting-support in axial alignment with said discharge port.

6. The subject matter claimed in foregoing claim 4, in which the mounting-support includes a fixed lip and an adjustable hook, juxtaposed to each other and adapted to engage the inner periphery of the discharge-port of the vacuum-cleaner, thereby to lock the mounting support to the vacuum-cleaner.

7. The subject matter claimed in foregoing claim 6, in which the mounting support is provided with aligning

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lugs for preventing the rotation of the mounting-support in relation to the vacuum-cleaner when operatively mounted thereon.

8. The subject matter claimed in foregoing claim 6, but in which the adjustable hook is carried on a slidable stem, slidably mounted generally radially of the axis of the discharge port, said stem having a screw threaded portion, and a screw-nut threaded thereon for tightening the hook into locking engagement and for releasing the hook from locking engagement.

9. The subject matter claimed in foregoing claim 8, in which the hook-carrying stem is keyed against rotation about its axis.

10. The subject matter claimed in foregoing claim 1, in which the cord-reel is hingedly mounted upon and exteriorly of the housing of the vacuum-cleaner.

11. The subject matter claimed in foregoing claim 10 but in which the hinging-axis is generally horizontal in the operative position of the vacuum-cleaner.

12. The subject matter claimed in foregoing claim 10 but in which the hinging-axis is in a generally upright position in the operative position of the vacuum-cleaner.

13. The subject matter claimed in foregoing claim 10 in which a movable latch is provided in an operative relation to the free-swinging portion of the reel, for forming a detachable engagement between the free-swinging portion of the reel and vacuum-cleaner housing, thereby releasably to hold the hingedly-mounted reel to the vacuum-cleaner in a latched position and to permit the reel to be swung away, upon its hinge, to an unlatched position.

14. An electric cord-reel having a mounting-support to mount on the discharge-end of a torpedo type vacuum-cleaner in operative juxtaposition to the discharge-port thereof and in the path of the air discharged therefrom with the major dimension of the cord-reel disposed transversely of the axis of the vacuum-cleaner, said mounting-support being adapted to space the cord-reel from said port to form an air-passageway open to the atmosphere between said discharge port and the hub of said reel transversely of the axis of the vacuum-cleaner and in direct communication with the discharge-port thereof, means exteriorly of the hub of said cord-reel arranged to baffle the air discharged from said port and to deflect it transversely of the axis of the vacuum-cleaner through said air-passageway, said mounting-support having at least two opposed fastening-portions, for displaceably fastening said cord-reel to said vacuum-cleaner in the above-stated relationship to the discharge-port thereof, at least one of said fastening-portions being displaceable in relation to the vacuum-cleaner and in relation to said mounting support, and at least one of said fastening-portions being non-displaceable in relation to the mounting-support, the displaceable fastening-portion being adapted for detachable engagement with the vacuum-cleaner.

15. An electric cord-reel having a mounting-support to mount on the discharge-end of a torpedo type vacuum-cleaner in operative juxtaposition to the discharge-port thereof and in the path of the air discharged therefrom, with the major dimension of the cord-reel disposed transversely of the axis of the vacuum-cleaner, said mounting-support being adapted to space the cord-reel from said port to form an air-passageway open to the atmosphere between said port and the hub of said reel transversely of the axis of the vacuum-cleaner and in direct communication with the discharge-port thereof, means exteriorly of the hub of said cord-reel arranged to baffle the air discharged from said port and to deflect and discharge it transversely of the axis of the vacuum-cleaner through said air-passageway, said mounting-support being generally U-shaped in cross-section, and having flanges at the free ends of the legs of the U-shaped cross-section, said flanges being affixed to the housing of the reel, and with the intermediate basal span of the U-shaped cross-section carrying at least one displaceable fastening mem-

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ber and at least one non-displaceable fastening-member for engagement with the vacuum-cleaner.

16. An electric cord-reel having a mounting-support to mount on the discharge-end of a torpedo type vacuum-cleaner in operative juxtaposition to the discharge-port thereof and in the path of the air discharged therefrom with the major dimension of the cord-reel disposed transversely of the axis of the vacuum-cleaner, said mounting-support being adapted to space the cord-reel from said port to form an air-passageway open to the atmosphere between said port and the hub of said reel transversely of the axis of the vacuum-cleaner and in direct communication with the discharge-port thereof, means exteriorly of the hub of said cord-reel arranged to baffle the air discharged from said port and to deflect it transversely of the axis of the vacuum-cleaner through said air-passageway, said mounting-support having reel-carrying portions secured to the reel-housing and having fastening portions intermediate and inwardly of the reel-carrying portions and offset in relation thereto, said fastening portions being adapted for displaceable engagement with the vacuum-cleaner.

17. An electric cord-reel having a mounting-support as claimed in claim 14, but in which one of said fastening-portions is a fixed port-engaging lip and the other is a movable port-engaging lip, each adapted to engage the discharge-port of the vacuum-cleaner, the movable port-engaging lip being disposed for movement in a direction radial to the axis of the discharge-port.

18. An electric cord-reel having a mounting-support as claimed in claim 17, in which the movable port-engaging lip is carried by a screw-operated stem and including a manually-operable screw portion disposed intermediate the reel and the vacuum-cleaner when the reel is operatively mounted upon the vacuum-cleaner and which extends outwardly in a radial direction a sufficient distance to be readily accessible to manual operation.

19. An electric cord-reel having a mounting-support as claimed in claim 15, but in which the intermediate basal span of the mounting-support has an aperture therethrough corresponding generally to the discharge port of the vacuum-cleaner and adapted to be disposed in registration therewith.

20. An electric cord-reel having a mounting-support as claimed in claim 19, but in which the intermediate basal span of the mounting-support carries said displaceable fastening-member disposed generally radially of the axis of the aperture in said basal span and carries a hook at its inner end to engage the discharge-port.

21. An electric cord-reel having a mounting-support, as claimed in claim 16, in which the fastening-portions include a stationary and a movable fastener, each adapted to engage the discharge-port of the vacuum-cleaner.

22. A mounting-device as claimed in claim 21 but in which one of the fastening-members is a hinging means and the other a movable locking means.

23. An electric cord-reel having a mounting-support, as claimed in claim 16, but in which the fastening-portions include hinging means for hinged connection with the vacuum-cleaner body and also locking means for locking the fastening-portion and the reel in its locked position about said hinging means.

24. A mounting device for exteriorly mounting an electric cord-reel upon a torpedo type vacuum-cleaner having an air-discharge port, said mounting device including a reel-receiving portion for carrying an electric cord-reel affixed thereto and at least two opposed fastening-portions for displaceably fastening said mounting device and the reel carried thereby to said vacuum-cleaner in operative juxtaposition to the discharge port thereof and in the path of the air discharged therefrom, with the major dimension of the cord-reel disposed transversely of the axis of the vacuum-cleaner, at least one of said fastening-portions being so constructed and arranged as to be dis-

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placeable in relation to said mounting device and adapted for detachable engagement with the vacuum-cleaner, at least one of said fastening-portions being arranged in non-displaceable relation to said mounting-device, said fastening-portions being so offset in relation to the reel-receiving portion of said mounting device as to space the reel from the discharge-port of the vacuum-cleaner so as to form an air-passageway open to the atmosphere therebetween transversely of the axis of the vacuum-cleaner and in direct communication with said port when said mounting-device and the reel carried thereby are operatively mounted upon the vacuum-cleaner, whereby the air discharged from said port is baffled and deflected transversely of the axis of the vacuum-cleaner through said air-passageway.

25. A mounting device for exteriorly mounting an electric cord-reel upon a torpedo type vacuum-cleaner having an air-discharge port, said mounting device being generally U-shaped in cross-section and having outwardly disposed reel-receiving flanges at the free ends of the legs of the U-shaped cross-section for carrying an electric cord-reel affixed thereto and at least one fastening-member carried by the intermediate basal span of the U-shaped cross-section in displaceable relation thereto for displaceably fastening said mounting device and the reel carried thereby to said vacuum-cleaner and at least one fastening-member carried by said mounting device in non-displaceable relation thereto for fastening said mounting-device and the reel carried thereby to said vacuum-cleaner in operative juxtaposition to the discharge port thereof and in the path of the air discharged therefrom, with the major dimension of the cord-reel disposed transversely of the axis of the vacuum-cleaner, said intermediate basal span being so offset in relation to the outwardly disposed reel-receiving flanges of said mounting device as to space the reel from the discharge-port of the vacuum-cleaner so as to form an air-passageway open to the atmosphere therebetween transversely of the axis of the vacuum-cleaner and in direct communication with said port when said mounting-device and the reel carried thereby are operatively mounted upon the vacuum-cleaner, whereby the air discharged from said port is baffled and deflected transversely of the axis of the vacuum-cleaner through said air-passageway.

26. A mounting device for exteriorly mounting an electric cord-reel upon a torpedo type vacuum-cleaner having an air-discharge port, said mounting device comprising a plate having reel-carrying portions and an apertured cleaner-engaging portion offset in relation to said reel-carrying portions so as to space the reel from the discharge port of the vacuum-cleaner and so as to form an air-passageway through said aperture and thence between the reel and the vacuum-cleaner transversely of the axis of the vacuum-cleaner and in direct communication with said port when said mounting device and the reel carried thereby are operatively mounted upon the vacuum-cleaner, whereby the air discharged from said port is baffled and deflected transversely of the axis of the vacuum-cleaner through said air-passageway.

27. A mounting-device as claimed in claim 24, in which one of the fastening-portions is a hinging means and the other is a locking means to lock the mounting-device about said hinging means.

28. A mounting-device as claimed in claim 25, but in which the intermediate basal portion of said mounting-device is provided with an aperture through which the air discharged from the port may pass.

29. In combination, a torpedo type electric vacuum cleaner having an elongated housing containing an electric motor, and air mover and a dust collector, said housing adapted to have its longitudinal axis generally horizontally disposed when in normal use and having a generally horizontally discharging air discharge port, an electric cord reel, and electric cord and said reel adapted to be conductively connected to said motor, means for mounting

said cord reel in a position exteriorly of said housing and in juxtaposition to said air discharge port and in the path of air discharged therefrom and with the major dimension of said reel disposed transversely of said axis of said housing, said mounting means being formed to space the cord reel, when in said position, a substantial distance from the discharge port of the cleaner and to provide an air passageway open to atmosphere between the cord reel and the housing transversely of said axis of said housing, said cord reel including means arranged to baffle at least a major portion of the air discharged from said port and to deflect it transversely of said axis of said housing through said air passageway to atmosphere.

30. The subject matter claimed in foregoing claim 29, in which the means for mounting the cord-reel includes means for detachably securing it to the vacuum-cleaner.

31. The subject matter claimed in foregoing claim 29, in which the means for mounting the cord-reel is hingedly connected with the vacuum-cleaner.

32. The subject matter claimed in foregoing claim 29, in which the means for mounting the cord-reel is hingedly connected with the vacuum-cleaner about a generally horizontal hinging axis.

33. The subject matter claimed in the foregoing claim 29, in which the means for mounting the cord-reel is hingedly connected with the vacuum-cleaner about a generally upright hinging axis.

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