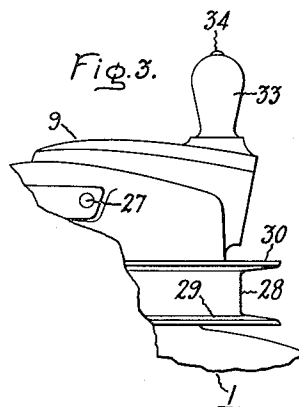
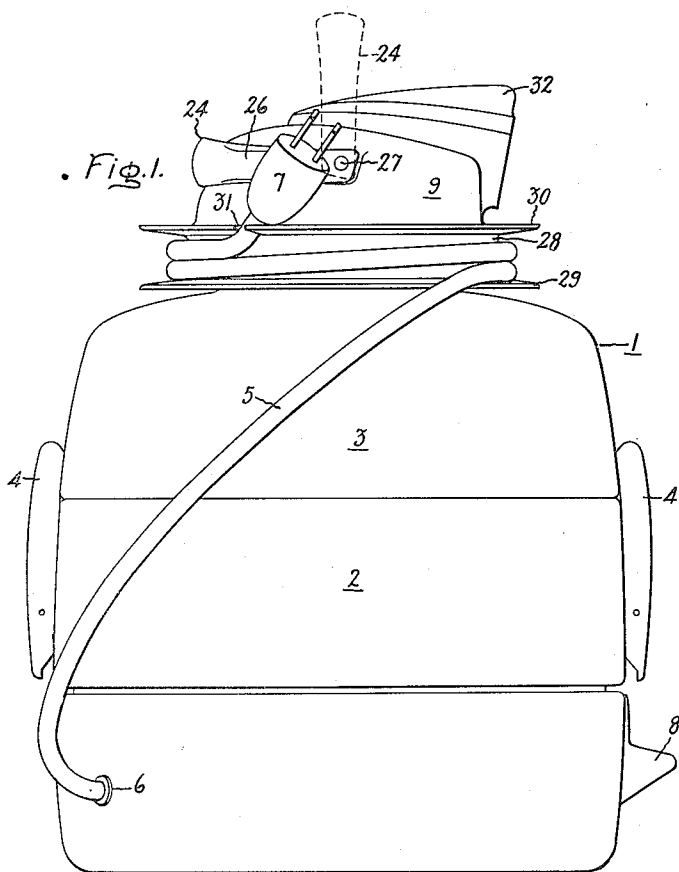
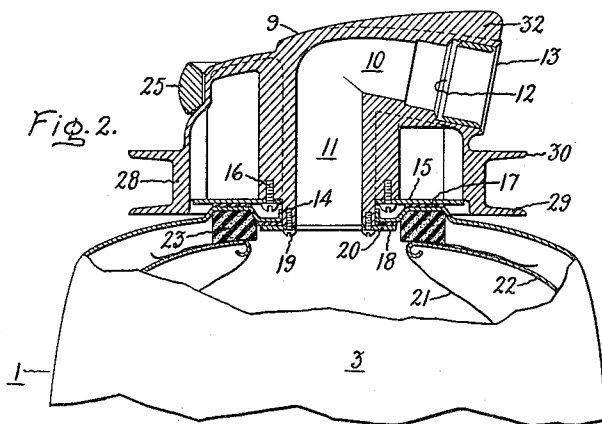


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COMBINED CORD STORAGE REEL AND AIR INLET
FITTING FOR SUCTION CLEANER AND THE LIKE
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1

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COMBINED CORD STORAGE REEL AND AIR INLET FITTING FOR SUCTION CLEANER AND THE LIKE

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2 Claims. (Cl. 15—323)

My invention relates to suction cleaners and similar electrical appliances and more particularly to a storage reel for the electrical cord usually provided with such appliances. My invention is intended to provide a simple, inexpensive, reliable arrangement for reeling the electrical cord on an appliance, for storage of the cord when the appliance is not being used. One object of my invention is to provide a cord storage reel requiring the addition of a minimum of parts to a suction cleaner or similar appliance. In doing this, I utilize parts already provided on the appliance for other purposes and combine parts of the cord reel with those existing parts. As will be apparent, a rotatable or swiveled element on the outside of a suction cleaner may be used as the pivot axis for the cord reel, and other existing elements on the cleaner may be used to hold the cord and to manipulate the reel.

Other objects and further details of that which I believe to be novel and my invention will be clear from the following description and claims taken with the accompanying drawing in which are illustrated two examples of cord reels embodying the present invention.

In the drawing, Fig. 1 is a side elevation of a suction cleaner with associated electrical cord and cord reel, Fig. 2 is a vertical section through the top of the cleaner of Fig. 1 showing parts of the interior of the cleaner, but with the cord removed from the reel, and Fig. 3 is a segmental elevation similar to the top of Fig. 1 but showing a modified form of my invention.

Although my invention was designed for use with a suction cleaner already provided with a swiveled or rotatable fitting, obviously, the invention could be used on other electrical appliances which are already provided with rotatable or swiveled fittings or elements similar to that on the exemplary suction cleaner. Referring to Fig. 1, the invention will be described in connection with a canister-type suction cleaner having a generally vertical cylindrical tank or body 1 which may be composed of a base portion 2 and a cover 3, removably held to the base as by clamps 4. A motor and fan unit (not shown) are provided inside of the cleaner in the ordinary fashion and an electrical cord 5, of the usual flexible character is secured at one end to the cleaner, passing into the body of the cleaner through a grommet 6 near the base of the body. This cord is provided at its free end with a male electrical attachment plug 7, as is customary to complete the cord set. Suitable wiring (not shown) extends from the cord inside of the cleaner to a switch or similar control 8 and thence to the motor portion of the motor and fan unit for controlling operation of the cleaner.

At the top of the cleaner illustrated in the drawing is provided a rotatable air-flow fitting 9, which in this case is a swiveled inlet at the center of the top of the cleaner body. This fitting has a generally L-shaped passage therein made up of a horizontal entrance section 10 and a vertical inlet section 11. The horizontal section is provided with means for coupling the usual flexible hose thereto, in this case an annular interior shoulder 12. The open end or entrance hole 13 of this section is adapted

2

to be coupled to the usual hose, with a latch on the hose engaging shoulder 12, as will be readily understood. The vertical section of the air-flow fitting extends through a central flanged hole 14 in the top of the cover for the cleaner body, and the fitting is arranged to be supported by the cleaner body within this hole in a freely rotatable fashion.

For the rotatable support of the fitting on the cleaner, I have shown an exterior bearing plate 15 suitably secured to the fitting as by screws 16 and surrounding the vertical inlet section 11. This bearing plate engages a friction-reducing and air-sealing gasket 17 which is cemented or otherwise suitably secured to the top of the cleaner around the hole 14. At the lower end of the vertical section of the fitting is provided an interior bearing plate 18 which may be held in place as by screws 19. A cooperating friction-reducing and air-sealing gasket 20 may be secured inside of the cleaner cover immediately surrounding the hole 14 and vertically opposite the interior bearing plate 18. With this arrangement, the fitting is freely rotatable about a vertical axis in the hole 14, while vertical movement up or down is prevented by engagement of the bearing plates 15 and 18 with the outside and inside of the cover, respectively.

Some sort of dust-collecting arrangement is provided within the cleaner body and in this case I have shown a porous filter bag 21 supported as by the filter bag supporting dome 22 and held and sealed within the cleaner around the inlet as by the sponge-rubber sealing ring 23.

For carrying the cleaner, a handle may be provided on the inlet fitting and I have shown this in the form of a U-shaped handle 24, having a central portion or bight 25 straddling the fitting and side portions 26 extending on either side of the fitting. This handle is pivoted as at 27 near each end on either side of the vertical axis of the fitting so that the handle is movable between the horizontal position shown in solid lines and the vertical position shown in dotted lines in Fig. 1 of the drawing.

In using the cleaner, the plug on the end of the cord set is connected in the usual way to a wall outlet or other convenient power source, the cleaner is placed on the floor and a hose is connected to the inlet fitting. The switch is then turned on and the hose with any attached tools is manipulated to clean the room. In the cleaning operation, the user may walk entirely around the cleaner and the swiveled inlet will permit this to be done without any inconvenience. When the cleaning is completed and it is desired to carry away or store the cleaner before its next use, the present invention comes into play.

As shown in all figures of the drawing, the rotatable nature of the air-flow fitting or inlet is used by providing the fitting with a relatively large diameter outer cylindrical drum or reel surface 28 which surrounds and is spaced radially away from the vertical inlet section of the fitting. This drum may be and preferably is made in one piece together with the fitting. At the bottom of the drum or reel surface, close to the cover of the body of the cleaner, I provide an annular generally horizontally extending cord-supporting flange 29. This flange, projecting radially outwardly from the reel, insures that cord wound on the reel will not drop against the body of the cleaner to stop relative rotation between the cleaner body and the reel. A second or upper flange 30 may be provided at the top of the reel if desired, but this second flange is not essential. However, if such an upper flange is provided, it serves as a convenient place to locate a cord plug holder such as the plug-holding notch 31 (Fig. 1). Instead of the notch in the upper flange, the entrance hole 13 in the inlet fitting may be used as the cord plug holder, simply by placing the plug in the hole, which is large enough to receive the plug loosely. In either event, the plug end of the cord may be removably attached to the inlet fitting above

3

the reel portion on the fitting, by what may be termed a plug-holding recess.

With the arrangement just described, when it is desired to store the cleaner, the plug on the cord is first removed from the electrical receptacle or other power source to which it was connected for operation, and the plug end of the cord is placed in the plug-holding notch or in the entrance hole. The inlet fitting, together with its attached reel, is then rotated by hand and the cord, supported and guided by the bottom flange, winds upon the reel surface from the plug end until there is no more loose cord to be wound. When wound on the drum, the cord will extend, as shown in Fig. 1, from the place where it is fastened to the cleaner, to the outside of the swivel-inlet cord reel. For purposes of clarity in illustration, the drawing shows only slightly more than a single turn of cord on the reel or drum. In actual practice, with the cord several feet long, there will be several turns and probably more than one layer of turns on the reel when the cord is completely wound.

When it is desired to use the cleaner again, the cord may be pulled at the portion between the reel and the lower fastening point, to rotate the reel and unwind the cord. Optionally, the cord may be unwound by rotating the reel directly by hand until the plug end can be removed from the plug-holding notch or entrance hole.

In order to facilitate rotation of the reel during winding or unwinding, I have provided a vertically extending handle, offset from the center of rotation of the reel fitting. Preferably, this rotating handle is above the level of the reel and the level of the cord plug holder. Thus, as in Figs. 1 and 2, it may take the form of the vertically extending fin 32 on the top of the outer horizontal end of the air-flow fitting, but it is preferably a vertically extending knob 33 (see Fig. 3) rotatably secured to turn on a vertical axis about a pin 34 which is secured to the top outer end of the inlet fitting. This knob 33, or the end of the fin 32, as can be seen from the drawing, is offset from the center of rotation of the reel at least approximately the same distance as the radius of the reel surface, so that the fitting can be turned readily without requiring gearing or similar force-multiplying structures. It should be obvious that the U-shaped carrying handle 24 might be used to rotate the reel instead of the fin 32 or knob 33. However, the carrying handle is not as convenient or as easy to use as either the fin or the knob.

As will be evident from the foregoing description, certain aspects of my invention are not limited to the particular details of construction of the examples illustrated, and I contemplate that various and other modifications and applications of the invention will occur to those

4

skilled in the art. It is therefore my intention that the appended claims shall cover such modifications and applications as do not depart from the true spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In a suction cleaner of the type having a generally cylindrical vertically extending body, an air inlet fitting rotatably mounted in the top of the body so as normally to be rotatable about a vertical axis, an electrical cord secured at one of its ends to the body near the bottom thereof and having an electrical connection plug on its free end, a cord reel comprising a cylindrical drum surface coaxially surrounding and secured to said rotatable fitting, a first annular flange projecting radially outwardly from said cylindrical surface next to the cleaner body, a second annular flange projecting radially outwardly from said cylindrical surface in spaced relation from said first flange, said second flange having a plug-holding notch therein, and a handle on said fitting above said second flange, said handle projecting upwardly from said fitting at a location offset from the axis of rotation of said drum.

2. In the suction cleaner of the type having a generally vertically extending body, an air inlet fitting rotatably mounted in the top of said body and being rotatable relative thereto about a vertical axis, a passageway formed in said fitting that communicates with the interior of said body and the atmosphere, an electrical cord secured to said body at a point other than near said top and having an electrical connection plug at its free end, a cord reel comprising a cylindrical drum secured to and positioned coaxially with relation to the axis of said rotatable fitting, an annular flange projecting radially outwardly from said drum near said top, said fitting having a plug holding recess formed therein, and a U-shaped handle secured to said fitting, said handle adapted to facilitate movement of the cleaner as a whole and also to function as a means for rotating said fitting and thereby wind or unwind said electrical cord on said reel.

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