Nov. 20, 1928. 1,692,137

W. V. ORR

SUCTION CLEANING DEVICE

Filed Feb. 10, 1921

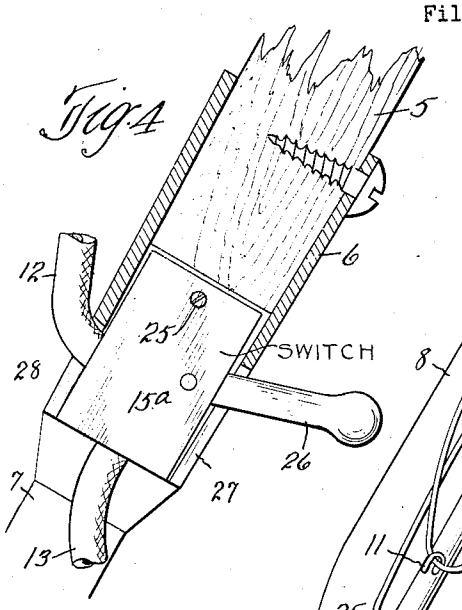


Fig. 4

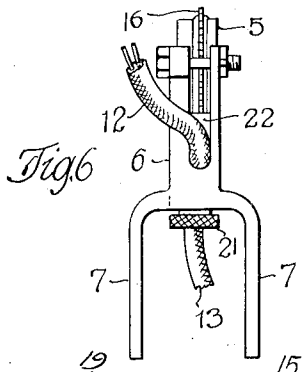


Fig. 6

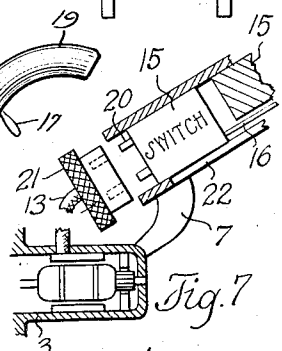


Fig. 7

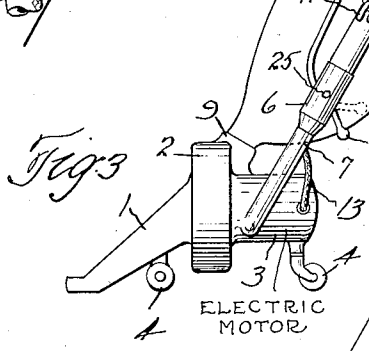


Fig. 3

Fig. 1

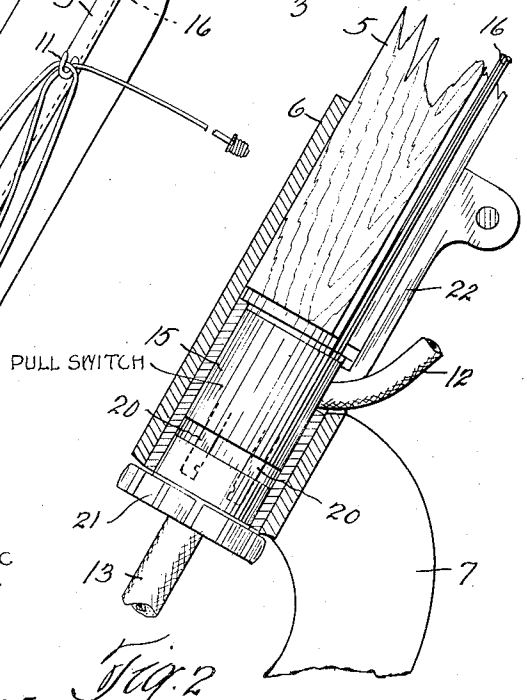


Fig. 2

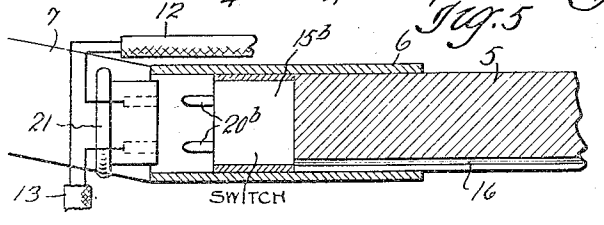


Fig. 5

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UNITED STATES PATENT OFFICE.

WILLIAM V. ORR, OF CLEVELAND, OHIO.

SUCTION CLEANING DEVICE.

Application filed February 10, 1921. Serial No. 443,820

This invention relates to suction sweepers of the self-contained electric type which comprise a collecting nozzle, a fan or other pumping device, and an electric motor contained in a single casing mounted on wheels so as to be movable over a floor or other surface, by the aid of a handle. The air which is sucked through the collecting nozzle by the pumping device is expelled into a porous bag hung from the handle and the electric current for operating the motor is brought to it by a flexible cord which is connected to any lamp socket or other outlet. This cord is necessarily made of considerable length for use in large rooms and is not all required when working in smaller chambers, wherefore the excess is kept wound on suitable hooks carried by the handle at one side of the dust bag; and suitable switch means is provided to control the current so as to stop and start the motor as required.

The objects of this invention are the provision of a new construction, location, arrangement, and combination of this switch whereby the wiring of the cleaner can be simplified, its construction cheapened, its control facilitated, and its shipment rendered more convenient; while further objects and advantages will appear as the description proceeds.

In the drawings, wherein I have shown certain illustrative embodiments of my invention, Fig. 1 is a side elevation of a complete cleaner embodying a preferred form of my invention; Fig. 2 is a detail sectional view of the lower end of the handle together with the fork and switch casing; Fig. 3 illustrates a modification; Fig. 4 is a detail sectional view of the lower end of the handle shown in Fig. 3; Fig. 5 is a similar view showing another modification; Fig. 6 is a bottom plan view of the parts shown in Fig. 2, and Fig. 7 is a sectional view through the device shown in Fig. 6 but with the elements of the connector separated.

Describing the parts by reference characters, 1 represents the collecting nozzle, 2 the pump or fan chamber, 3 the motor housing, and 4 the supporting wheels of the cleaner; these parts can assume any shape or position relatively to each other within the scope of this invention. 5 represents the handle whose lower end is received in the socket 6 of a fork 7 pivoted to the cleaner casing. 8 represents the dust bag whose lower end is attached to the outlet neck 9 and whose upper end is attached to the handle by suitable means such as the chain 10. This dust bag is generally of an elongated shape and extends well up the handle on one side, the other side of the same being provided with the hooks 11 for the flexible cord 12. An extension 13 of this cord runs to the motor.

I provide the lower end of the handle with a switch 15 which may be of any suitable or convenient type although I prefer to locate it inside of the socket 6; and while it may be operated in any desired manner the preferred arrangement comprehends an elongated operating member 16, such as a wire, running along the handle and suitably connected at its upper end to a trigger 17 or other movable device located within reach of the hand. For example the switch 15 can be of the usual "chain-pull" type, so arranged that one pull of the member 16 closes it and the next pull opens it; and the member 16 may conveniently be concealed in a longitudinal groove 18 such as a saw scarf in case the handle be of wood. I have shown the upper end of the handle as provided with a curved part 19 or pistol grip which is convenient but not essential.

I have also shown the switch 15 as combined with a separable electric connector, one end of the switch body being provided with a pair of spaced contact poles 20—20 adapted for the reception of the removable element 21 of said connector, thus enabling the ready removal of the handle for shipment; also the socket 6 of the fork is formed with a slot 22 leading from this switch to its upper end, thus enabling the ready insertion and removal of the previously assembled switch and cord whenever the handle is removed. As a result the electric cord is not permanently attached to the handle at any point, the operations of wiring and assembling can be performed separately, the electrical fixtures are simplified and cheapened, and the control of the motor is immediately under the hand of the user.

In Figs. 3 and 4 I have shown an alternative embodiment of my invention wherein the switch casing 15ª is detachably secured in a slot in the lower end of the handle 5 in any suitable manner as by a screw 25. The switch is here shown as of the lever type, the lever 26 projecting downwardly so as to be easily movable by the user's foot. Inasmuch as there is no mechanical connection between the switch and handle the use of a separable

plug becomes unnecessary, the wires 12 and 13 being permanently connected to the switch and the lower end of the socket wall 6 being formed with slots 27 and 28 for the lever 26 and cord 12 respectively. Upon removing the screw 25 and springing the handle forks away from the casing the handle can be removed, leaving all the electric connections with the cleaner, ready to be boxed and shipped.

It will be understood that many changes may be made in the design, construction, and arrangement of the parts as I do not limit myself in any wise except as recited in the annexed claims.

In Fig. 5 I have shown another embodiment of my invention having the same location of switch but a different wiring arrangement. Here neither of the flexible conductors 12 or 13 is attached to the handle nor even to the switch but only to the plug 21; and the switch body has two studs 20^b 20^b adapted to enter suitable sockets in the plug. The function of the switch is, then, merely to make and break connection between these studs. This arrangement has the advantage of locating the switch upon the handle while divorcing both switch and handle from any wiring whatever.

Having thus described my invention what I claim is:

1. In a device of the character described, in combination, a casing adapted to be moved along a surface and having electrical devices therein, a fork pivoted to said casing and having an open ended socket whose wall is slotted, an electric switch located in the end of said socket nearest the casing, a flexible electric cord extending between said switch and casing, a second electric cord extending from said switch through said slot, and a handle detachably secured in the outer end of said socket.

2. In a device of the character described, in combination, a casing adapted to be moved along a surface and having electrical devices therein, a socket member pivoted to said casing and having an open ended socket, a handle detachably secured in the outer end of said socket, a control switch detachably secured in the inner end of said socket, a separable electric connector having a removable element combined with said switch, and a flexible electric cord connecting said electrical devices with the removable element of said separable connector.

3. In a device of the character described in combination, a casing adapted to be moved along a surface and having electrical devices therein, a handle detachably secured to said casing, an electric switch and a separate electric connector carried by that part of the handle which is nearest said casing, said switch having an operating member projecting outside said handle, one member of said separable electric connector combined with said switch, a flexible electric cord connecting said electrical devices with the other member of said separable connector, and a second electric cord adapted to connect said devices to a source of electric power by way of said switch.

4. In a device of the character described in combination, a casing adapted to be moved along a surface and having electrical devices therein, a handle detachably secured to said casing, and having a longitudinal socket in that part of the handle which is nearest said casing, an electric switch and a separable electric connector located in said socket, said switch having an operating member projecting outside said socket and one member of said separable connector combined with said switch, and a pair of electric cords, one leading from the other member of said separable connector to said electric devices and the other adapted to be connected to a source of electric energy.

5. In a device of the character described, in combination, a casing adapted to be moved along a surface and having electrical devices therein, a fork having two arms and a hollow socket to which said arms are connected, said arms having their free ends secured to said casing, a handle secured in one end of said socket, an electric switch secured in an adjacent part of said socket, the switch having combined therewith a separable connector the removable element of which is accessible through the inner end of said socket, a flexible electric cord connecting said electrical devices to the removable member of said separable connector, and an operating member for said switch projecting from said socket at the lower side of said handle.

In testimony whereof, I hereunto affix my signature.

WILLIAM V. ORR.

CERTIFICATE OF CORRECTION.

Patent No. 1,692,137. Granted November 20, 1928, to

WILLIAM V. ORR.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, line 61, claim 3, for the word "separate" read "separable"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 5th day of February, A. D. 1929.

M. J. Moore,
Acting Commissioner of Patents.

(Seal)