March 2, 1926. 1,575,256

J. DEL RIO

ATTACHMENT TO SUCTION SWEEPERS

Filed Dec. 31, 1923

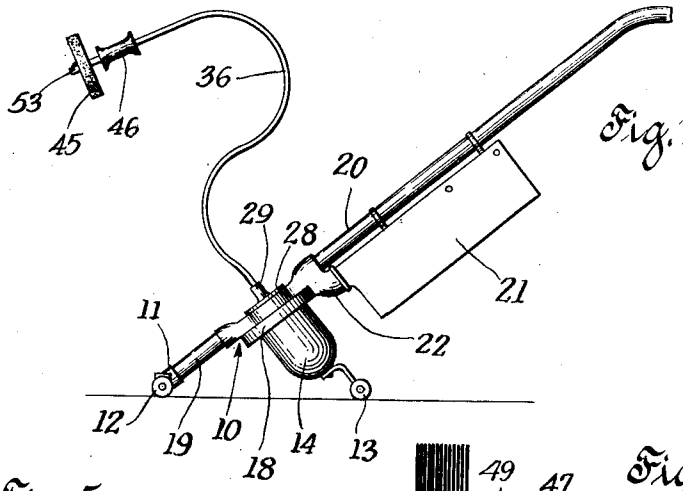


Fig. 1.

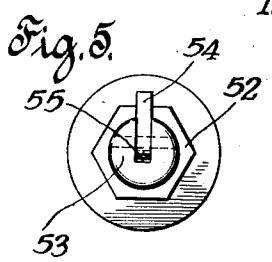


Fig. 5.

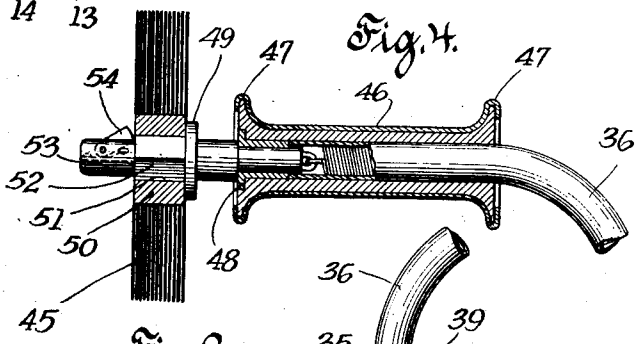


Fig. 4.

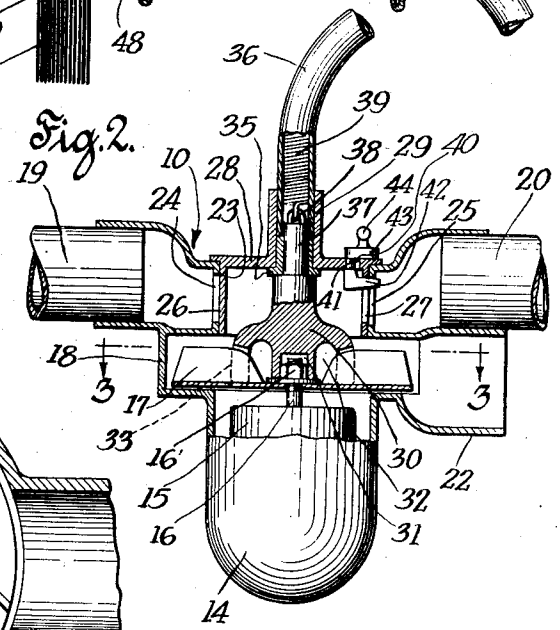


Fig. 2.

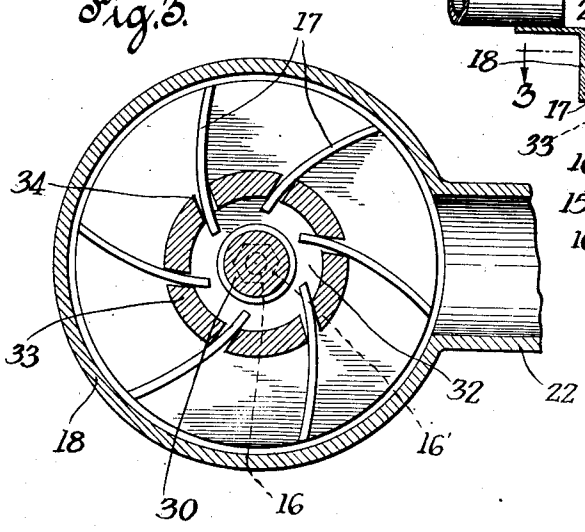


Fig. 3.

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UNITED STATES PATENT OFFICE.

JOAQUIN DEL RIO, OF NEW YORK, N. Y.

ATTACHMENT TO SUCTION SWEEPERS.

Application filed December 31, 1923. Serial No. 683,796.

To all whom it may concern:

Be it known that I, JOAQUIN DEL RIO, a citizen of the Republic of Mexico, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Attachments to Suction Sweepers, of which the following is a specification.

This invention relates to improvements in suction sweepers, of the type containing a motor, electrically operated or otherwise, for driving a fan or its equivalent, by means of which a powerful suction or partial vacuum is obtained and utilized in removing dust and like particles or fragments of matter from surfaces, such apparatus being of common occurrence in domestic establishments.

The principal purpose of the invention is to further extend the scope of usefulness of such apparatus by the utilization of the motor for a wide range of domestic purposes and without in any way or manner interfering with its usual and customary purpose.

Another object is to provide an attachment of such simple construction that it can be readily applied or removed from the sweeper structure by any person, in a moment's time.

A further aim is in the provision of means, in the form of a sweeper attachment whereby power can be applied from the motor to accomplish such purposes as driving a sewing machine, washing machine, running a coffee mill, egg beater or the like, operating a buffing wheel and other analogous purposes that constantly present themselves in an ordinary home.

These several objects and others which will become apparent as the description progresses, are attained by the novel construction and combination of parts hereafter described and shown in the accompanying drawing, forming a material part of this disclosure, and in which;—

Figure 1 is a side elevational view of a conventional type of suction cleaner, illustrating the application of the invention.

Figure 2 is an enlarged fragmentary longitudinal view taken through the motor casing, air inlet and outlet ports and showing an embodiment of the attachment in operative position.

Figure 3 is a further enlarged transverse sectional view, taken on line 3—3 of Fig. 2.

Figure 4 is a partial side elevational, partial sectional view of the opposite end of the attachment, illustrating one of the purposes to which it may be put.

Figure 5 is an enlarged front or end view of the same.

Referring to the drawing in detail, the numeral 10 designates in general the body or main frame portion of a conventional type of domestic suction cleaner, the same having a suction head 11 provided with wheels 12 at its lower, operative end, similar wheels 13 being disposed below the casing 14, containing an electric motor 15.

Said motor is shown as having a shaft 16 directly engaged to a fan having a plurality of curved blades 17 operating in an enlarged chamber 18, the wall of which integrally connects the motor casing 14 with the body 10.

From the body 10 is a hollow connection 19 leading to the head and opposite thereto is another connection communicating with the hollow handle 20, below which is ordinarily disposed the dust bag 21 communicating with the fan chamber 18 by a duct 22.

Said chamber 18 has at its upper end a reduced circular compartment 23 from which a port 24 leads to the connection 19 on one side and a similar port 25, on the opposite side leads to the handle 20.

Fitted to the circular compartment 23 is a drum 26, open at its bottom to the chamber 18 and provided with a single port 27 which may be turned to register with either of the ports 25 or 26 by rotating the cover 28, the edge of which overlies the corresponding top surface of the compartment.

In ordinary practice the cover plate may be transparent so as to provide means for viewing the operation of the motor fan and passing particles and is readily removed for access thereto or turned so as to cause suction through the head or handle as may be desired, the parts thus far described being of usual construction and given only to aid in a thorough and complete understanding of the power conducting attachment.

In carrying out the invention the drum as described is removed and another substituted having the same features and characteristics with the difference that the plate 28 is solid and opaque, in place of being transparent and is provided with a central extending hub 29.

A driver 30 is formed with a central opening 31 adapted to engage the raised end of

the motor shaft 16 or driving nuts 16′ at its end as used to engage the fan hub, and an annular recess 32 in the head limits the outer drive member 33, which is transversely recessed, as at 34, to fit loosely over the inner ends of the vanes or blades 17 of the fan to be driven directly thereby.

The shoulder of the head 30 abuts a flange 35 on a cylindrical casing 36 fitted to the bore of the hub 29 and projecting into the lower end of the casing is a reduced extension 37 of the driver 30, the extension terminating in an eye 38 in which is fixed the end of a flexible shaft 39 enclosed in the casing 36.

In order to hold the cover 28 and its associated elements firmly but removably within the chamber 23, a hole 40 is drilled through the plate to receive a stem 41, connecting a catch 42 suited to engage below the edge of either port 24 or 25, clamping the cover when the block or button 43 is turned by the knob 44.

While the above is depictive of one form of clamping means it will be apparent that another of different type may be substituted.

The flexible shaft 39 and its casing may be of any desired length commensurate with the purpose it is to perform and if used in connection with a buffing wheel 45, as shown in Figure 4, may be passed through a handle 46 having flanged ends 47 and held in place on the casing 36 by collars 48 on the casing.

The outer end of the shaft may be enlarged and have fixed to it a collar 49, abutting the wheel hub 50, the hub having a polygonal opening 51 to receive a similarly shaped spindle 52 on the end of the shaft, its extending portion 53 carrying a pivoted latch detent 54.

Other adaptations of the device readily present themselves suited to varying conditions and circumstance.

As changes of construction could be made within the scope of the invention, it is intended that all matter contained in the foregoing description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The combination with a suction sweeper having a motor, a fan driven directly thereby and a casing enveloping said motor and fan, said casing having a cylindrical chamber over the fan, of a cover for said casing, said cover having a depending circular flange fitting the chamber and an elongated hub, a rotatable catch removably securing said cover to said casing, a drive head journalled in said hub and intersecting the vanes of said fan, and a flexible shaft actuated by said drive head.

2. The combination with a suction sweeper having a motor, a fan driven thereby and a casing enclosing said motor and fan, said casing having a cylindrical chamber open opposite the fan, of a drive head recessed to engage the end of the shaft of said motor below the mentioned chamber and slotted to engage the vanes of the fan, manually releasable means for retaining operative connections between said head and fan vanes, a flexible shaft driven by said head, means for manipulating the free end of said shaft, and means carried by said shaft for operative engagement with a rotative element.

In testimony whereof I have signed my name to this application.

JOAQUIN DEL RIO.