

W. W. ROSENFELD.
SUCTION CLEANER.
APPLICATION FILED AUG. 13, 1915.

1,348,583.

Patented Aug. 3, 1920.

Fig. 1

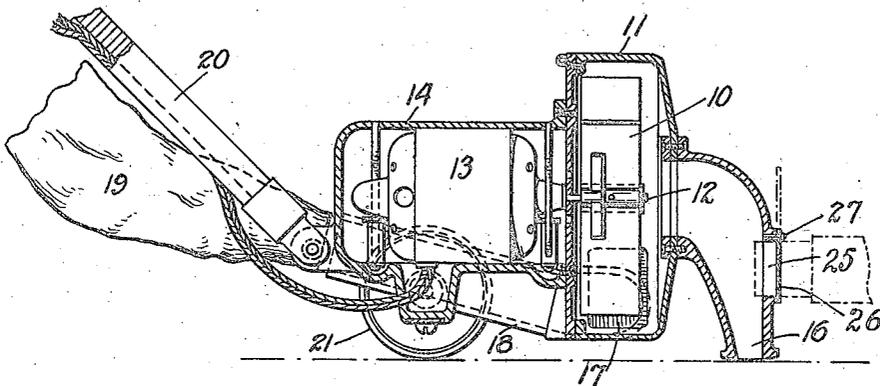
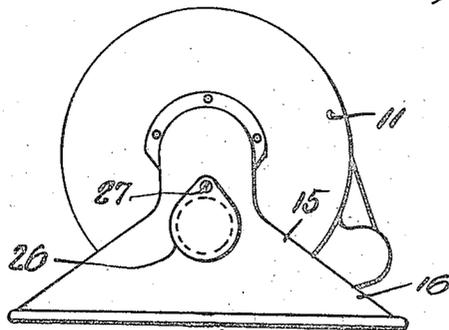


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM W. ROSENFELD, OF NEW YORK, N. Y., ASSIGNOR TO ELECTRIC VACUUM CLEANER COMPANY, INC., A CORPORATION OF NEW YORK.

SUCTION-CLEANER.

1,348,583.

Specification of Letters Patent.

Patented Aug. 3, 1920.

Original application filed July 1, 1912, Serial No. 706,843. Divided and this application filed August 13, 1915. Serial No. 45,288.

To all whom it may concern:

Be it known that I, WILLIAM W. ROSENFELD, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Suction-Cleaners, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This application relates to suction cleaners of the self-contained type, that is, those in which a motor, fan, suction nozzle and dirt receptacle are mounted to move together as the suction or cleaning nozzle is moved over the surface to be cleaned. It is desirable that cleaners of this kind, in addition to their regular use for cleaning floors or floor coverings over which the cleaner is moved, shall be adaptable for use with the aid of suitable attachments or hand tools for cleaning walls, furniture, drapery, etc.

The object of the present invention is to provide a self-contained suction cleaner having means for convenient attachment of a hose or tube leading from a hand tool which shall be of such character as to avoid complications of parts and to secure efficiency in operation by providing a direct and unobstructed path for the sucked-in air. The invention relates especially to the construction of the nozzle or nozzle casing extending forward and downward from the front of the fan casing of the machine.

A full understanding of the invention can best be given by a detailed description of an approved embodiment of the same, and such a description will now be given in connection with the accompanying drawings; in which—

Figure 1 is a longitudinal sectional view of a self-contained suction cleaner embodying the invention; and

Fig. 2 is a front view of the cleaner.

Referring to the drawing, 10 represents a rotary suction fan mounted to rotate in the fan casing 11, the fan being mounted on and driven by the shaft 12 of an electric motor 13 which is mounted in a supporting casing 14 extending rearwardly from the fan casing. The front wall of the fan casing is formed with a central opening and has secured to it a forwardly and

downwardly extending nozzle casing 15 providing an in-take passage, and the lower end of which is shaped to form a floor cleaning nozzle 16. The lower part of the nozzle casing is extended laterally or transversely of the machine as usual to provide a comparatively long and narrow suction in-take slot between the lips of the nozzle. A discharge passage 17 leads tangentially from the fan chamber and communicates through a backwardly leading pipe 18 with a porous receptacle 19 for receiving the dirt and dust discharged from the fan chamber. The receptacle 19 is hung from an operating handle rod 20 which is pivotally connected to the body of the cleaner to swing vertically and by which the cleaner is moved over the floor or surface to be cleaned. The cleaner is provided with a pair of running wheels 21, of which one is shown in the drawing, located to the rear of the center of gravity of the cleaner, and in the particular construction shown by the drawing the nozzle 16 rests directly on the floor or floor covering, so that the cleaner is supported by the running wheels 21 and the nozzle.

In addition to the elongated in-take slot or opening at the bottom of the nozzle 16, the nozzle casing is formed with a secondary normally closed in-take opening 25 located in the front wall of the nozzle casing, such opening 25 being normally closed, as by means of the shutter 26 formed by a plate which is pivotally secured at the point 27 and which when in its normal closed position rests closely against the portions of the nozzle casing surrounding the opening, and which is adapted to be turned on its pivot away from the in-take opening to a position as indicated by dotted lines. When the shutter is thus turned to open position, the in-take opening 25 is adapted to receive, as indicated by dotted lines, a suitable connecting fitting on the end of a tube leading from a hand nozzle or brush such as is commonly employed for suction cleaning of walls, furniture, drapery, etc. When the cleaner is thus used with a hand tool attached, the elongated in-take opening at the bottom of the nozzle will be sufficiently closed by allowing it to rest directly against the floor or floor covering, or it may obviously be closed by other suitable means.

This secondary in-take opening is best located with its axis lying in or approximately in a vertical plane extending centrally of the machine and longitudinally of its direction of movement, and in a machine in which the axis of the fan shaft lies in a central vertical plane extending longitudinally of the direction of movement of the machine, as in the machine shown, the axis of this in-take opening is most desirably located in or approximately in such plane. It is also desirable that the opening be located slightly below the center of the opening into the fan casing, principally for the purpose of avoiding chance intrusion of anything into contact with the fan blades when the opening is open.

It will be observed that the means which I provide for the connection of a hand tool to the suction cleaner is not only simple and in other respects suitable for the purpose and unobjectionable, but it has the important advantage of avoiding interference with the efficiency of the cleaner in its use for floor cleaning, and also gives a maximum efficiency in the use of the cleaner with a hand tool connected to the secondary in-take opening. In both cases there is an unobstructed and substantially direct passage through the nozzle casing from the in-take opening to the fan chamber. It will be noted, further, that by reason of the location of the secondary in-take opening, when a flexible pipe or tube is connected therewith leading to a hand tool the cleaner may be moved about as required by simply drawing it about by means of the connecting tube, which pulls from the front of the machine in the direction in which the wheels run and which tends to lift the nozzle and front end of the cleaner so that the cleaner, resting mostly on its wheels 21, is easily moved about as desired.

What is claimed is:

1. A self-contained suction cleaner having a nozzle casing extending forwardly and downwardly from the front wall of the fan casing to provide an in-take passage communicating directly with the fan chamber through a central opening in the front wall of the fan casing concentric with the fan axis, said nozzle casing being extended laterally at its lower end to form a floor cleaning nozzle having an elongated in-take opening, and said nozzle casing having a normally closed in-take opening in the wall above said elongated in-take opening for connecting a tube leading from a cleaning tool with the in-take passage through the nozzle casing.

2. A self-contained suction cleaner having running wheels back of the center of gravity of the cleaner, and having a nozzle casing extending forwardly and downwardly from the front wall of the fan casing to provide an in-take passage communicating directly with the fan chamber through a central opening in the front wall of the fan casing concentric with the fan axis, said nozzle casing being extended laterally at its lower end to form a floor-cleaning nozzle having an elongated in-take opening, and said nozzle casing having a normally closed in-take opening through its front wall above said elongated in-take opening and with its axis in the same vertical plane with the axis of the fan for connecting a tube leading from a cleaning tool with the in-take passage through the nozzle casing.

3. A self-contained suction cleaner having a nozzle casing extending forwardly and downwardly from the front of the fan casing to provide an intake passage communicating directly with the fan chamber through a central opening in the front wall of the fan casing, said nozzle casing being extended laterally at its lower end to form a floor cleaning nozzle having an elongated intake opening, and said nozzle casing having a normally closed intake opening through its front wall below the opening in the wall of the fan casing for connecting a tube leading from a cleaning tool with the intake passage through the nozzle casing.

4. A self-contained suction cleaner having a nozzle casing extending forwardly and downwardly from the fan casing to provide an intake passage communicating directly with the fan chamber through a central opening in the front wall of the fan casing, said nozzle casing being extended laterally at its lower end to form a floor cleaning nozzle having an elongated intake opening, and said nozzle casing having a normally closed intake opening through its front wall located out of axial alinement with the opening in the front wall of the fan casing but in the same vertical plane therewith for connecting a tube leading from a cleaning tool with the intake passage through the nozzle casing.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM W. ROSENFELD.

Witnesses:

A. L. KENT,

PAUL H. FRANKE.