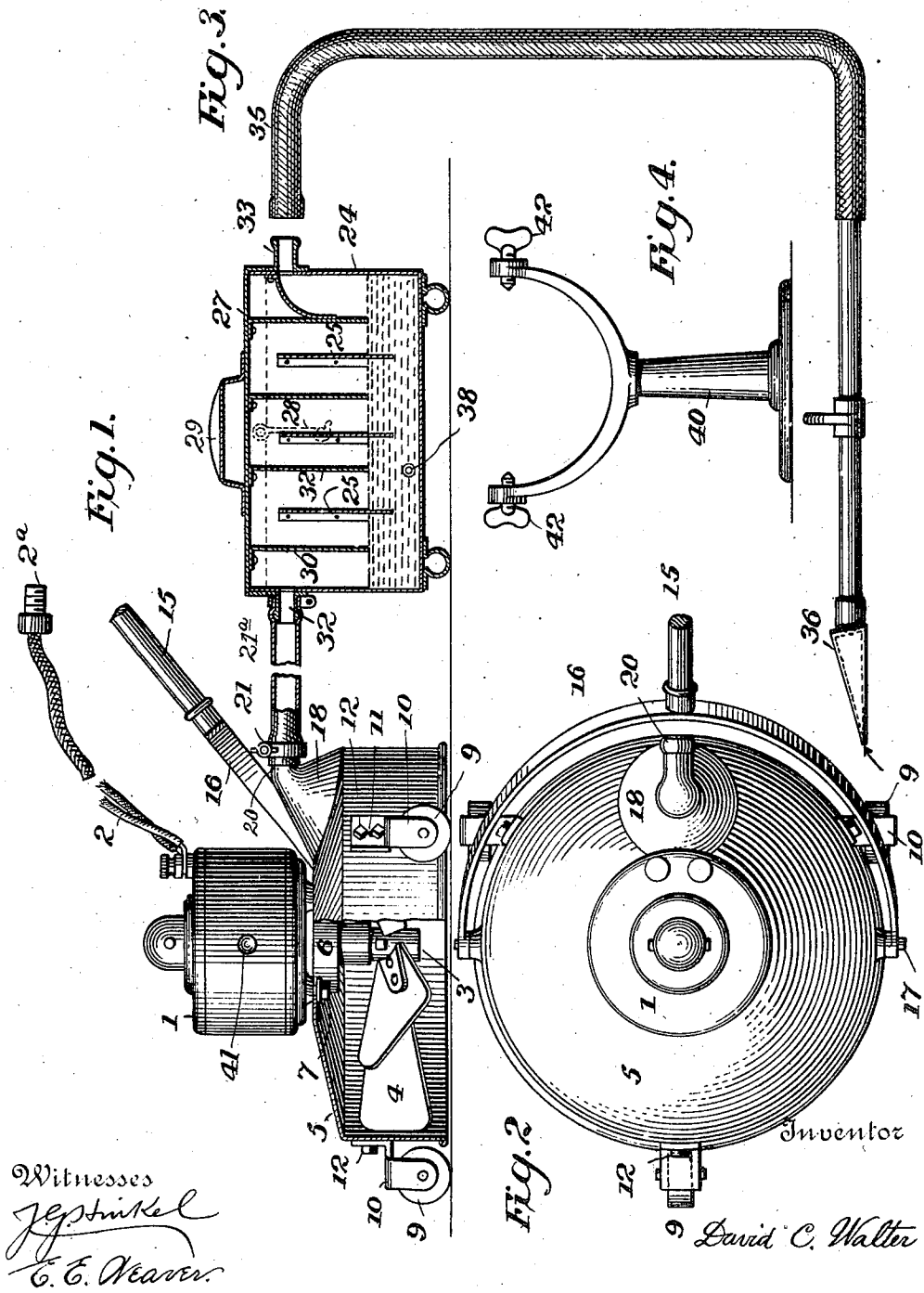


Patented Jan. 9, 1912.



UNITED STATES PATENT OFFICE.

DAVID C. WALTER, OF TOLEDO, OHIO, ASSIGNOR OF ONE-HALF TO ALMON HALL, OF TOLEDO, OHIO.

PNEUMATIC CARPET-SWEEPER.

1,014,027.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, DAVID C. WALTER, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Pneumatic Carpet-Sweepers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to a pneumatic carpet-sweeper designed in such manner that the entire apparatus shall be so light and simple that it may be transported and handled manually and carried from room to room and placed close to the work to be performed, and which shall be so inexpensive that it may be owned and used by any person having in his house the ordinary incandescent electric lights.

My invention is further designed to furnish an electric fan and a dust-collector made in two separable parts which, when separated, may be carried in the two hands of the operator to any part of the house where the sweeping or cleaning is to be performed.

My invention is also designed to furnish a construction which will permit the fan of my device and its driving motor to be employed separately as a cooling or ventilating fan or, conversely, which will permit the ordinary house-fan to be utilized as a pneumatic sweeper.

My invention relates also to certain details of construction hereinafter described and pointed out in the claims.

I attain these objects by means of the devices and arrangement of parts hereinafter described and shown, and illustrated in the accompanying drawings in which,—

Figure 1 is a side elevation of my pneumatic sweeper, with a portion of the fan-casing broken away and showing in connection therewith one form of dust-collector which may be used therewith in longitudinal section; Fig. 2 is a top-plan view of the sweeper; Fig. 3 is a side elevation of a pneumatic broom and connecting hose that may be employed in connection with my

sweeper; and Fig. 4 is a front elevation of a separate motor-stand.

I employ an electric motor 1, of the usual or any preferred type, having inleaving and outleaving conductors 2, these being adapted at one end, as at 2^a, for connection with an ordinary electric lamp-socket. The shaft 3 of the motor carries at its outer extremity a rotary fan 4. The motor is detachably mounted upon a casing 5, having its boss 6 projecting through a central aperture in the top of the casing and being secured in position by means of bolts 7. The bottom of the casing is entirely open and is carried in close proximity to or in contact with the carpet over which it is adapted to travel by means of rollers or casters 9, mounted in brackets 10, which are vertically adjustable by means of slots 11 and nuts 12. A handle 15, is connected to the sweeper by means of a swinging bail 16, pivotally secured upon either side of the casing to lugs 17. The top of the casing is provided with a funnel-shaped extension 18, at the rear, which terminates in a tubular connection 20, to which the connection with the dust-receptacle or the pneumatic broom may be secured with a clamp 21.

Any suitable dust-receptacle may be employed and may be connected with the tubular extension 20 by means of a flexible hose 21^a of sufficient length to permit of the movement of the sweeper over the carpet or floor through a convenient radius. I have illustrated one form of dust receptacle which may be used consisting of a rectangular vessel 24 having transverse vertical partitions 25 which do not reach to the bottom or to the top of the vessel. A cover 27 having downwardly turned marginal flanges is adapted to fit closely over the upper edge of the vessel, the cover being securely locked by means of hooks 28 upon either side, and having a handle 29 by means of which the receptacle may be carried. Secured to and depending from the cover are sheet-metal baffle-plates or deflectors 30, which, when the cover is in place, project downwardly at equidistant intervals between and in alternation with the partitions 25, and extend entirely across the interior of the vessel. One end of the vessel is provided with a tubular opening 32, to which the hose connecting with the sweeper may be attached, and at the other end a tubular opening 33 is adapt-

ed to receive a hose 35, when the pneumatic broom or nozzle 36 is to be used. Into the bottom of the vessel 24 is poured water to such depth that a slight space is left between the lower margins of the deflectors 30 and the surface of the water, the lower margins of the plates 25 being submerged. The water may be emptied from the vessel by removing the plug from the hole 38 near the bottom.

The operation of my device as thus far explained is as follows:—The motor is set in operation by connecting the plug 2^a to one of the electric light sockets, revolving the fan blades rapidly and in a direction to cause a suction upwardly from the carpet, and exhausting through the hose connection into the dust-receptacle 24. The rapidly revolving blades in very close proximity to the carpet will cause a thorough cleansing action thereof and will withdraw the dust and dirt, which will be carried by the exhaust draft of air being constantly forced through the dust-receptacle or collector. As the dust-laden air traverses the sinuous or zigzag path through the receptacle, the dust will be deposited and the air will issue through the opening 33 free from dust.

When it is desired to use the pneumatic broom 36, the hose 35 secured to the handle is attached to the tubular opening 33 of the dust receptacle. The sweeper is then either raised above the floor or may be turned upwardly or mounted upon the stand 40, by resting the sockets 41 of the motor shell upon the set-screws 42 of the stand, and the motor is operated in a direction to cause an exhaust through the dust-receptacle and tube 35, and a suction through the broom head 36.

It may sometimes be desirable to use the pneumatic broom as a blower to force the dust out of fabrics or out of crevices, etc., and in this case the hose 35 may be connected directly to the tubular extension 20 of the sweeper which is operated in the upturned position as before, the motor being caused to revolve in the direction to force the air outwardly through the tube and broom.

Another important advantage of my apparatus resides in the combined use of the

sweeper and broom, when it is desired to take up dust and dirt from corners of a room and to operate close to the baseboards. In such cases the broom blows the dirt from the crevices into the path of the sweeper which immediately collects it.

Instead of driving the motor in one direction or the other according to whether the fan is acting as an exhaust or as a blower, it is obvious that different fans may be employed having their blades reversely inclined.

It will be evident that the blower may be used as an ordinary house-fan by removing the casing 5 and mounting the motor in the stand 40.

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

1. A pneumatic carpet cleaning apparatus comprising a motor driven fan mounted upon a vertical shaft, a removable hood inclosing said fan and having an open bottom, means for movably supporting said hood and said fan in close proximity to the carpet, and receiving means for the dust connected to the hood.

2. A pneumatic carpet cleaning apparatus comprising a traveling hood having an open bottom, a motor driven fan mounted upon a vertical shaft in said hood in proximity to the open bottom thereof, and dust collecting means connected to said hood.

3. A pneumatic carpet-sweeper, comprising a rotary fan mounted upon a vertical shaft, an electric motor operatively connected thereto, a hood inclosing said fan having an open bottom detachably secured to said motor and constituting a suction chamber, means whereby said hood may be moved over the carpet with its mouth in close proximity thereto, and means connected with the hood for collecting the dust.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID C. WALTER.

Witnesses:

F. P. CHAPIN,

ADA E. CAMERON.