

D. T. KENNEY.
 APPARATUS FOR REMOVING DUST.
 APPLICATION FILED JUNE 6, 1906.

1,057,347.

Patented Mar. 25, 1913.

Fig. 1.

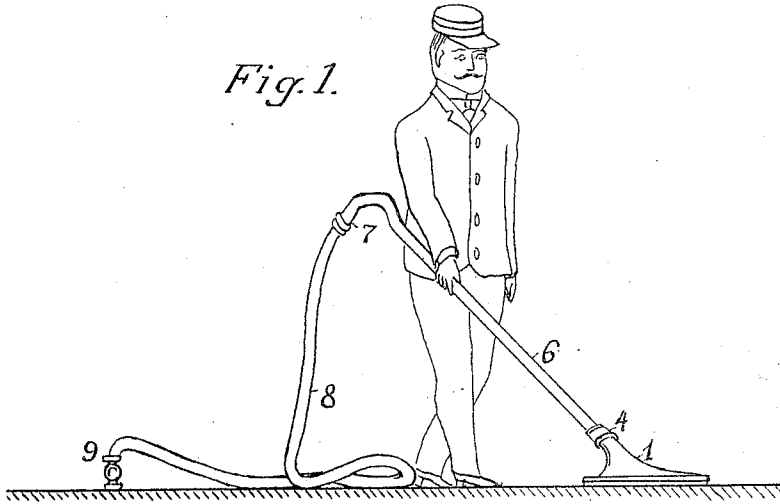


Fig. 2.

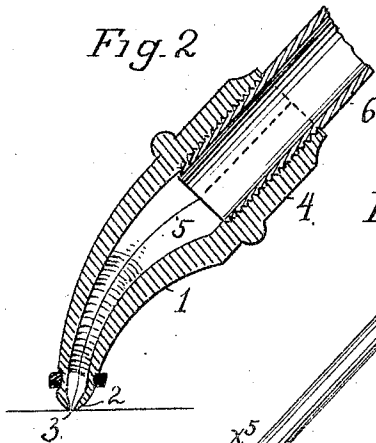


Fig. 3.

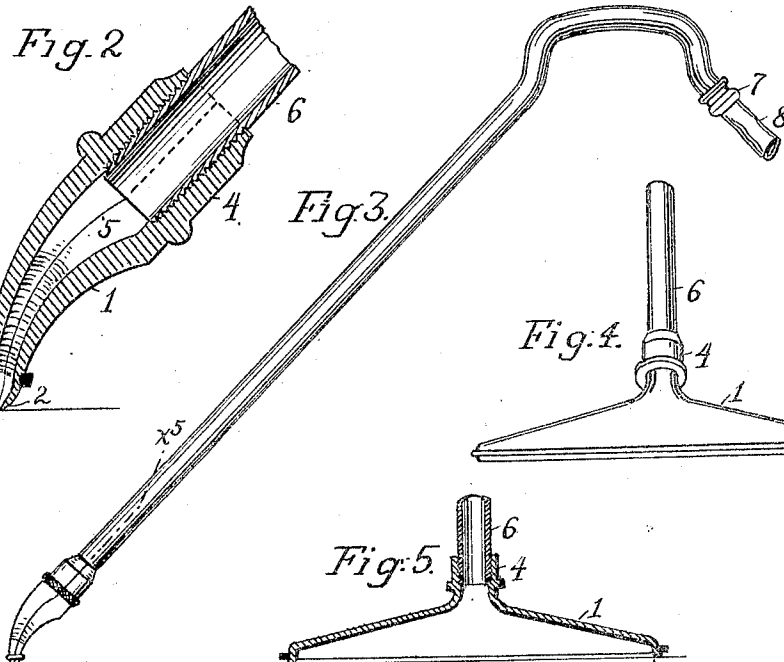


Fig. 4.

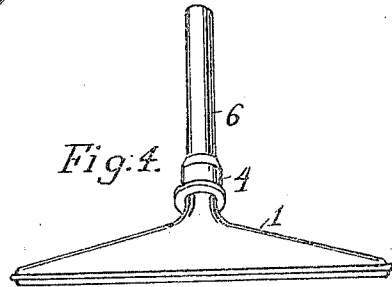
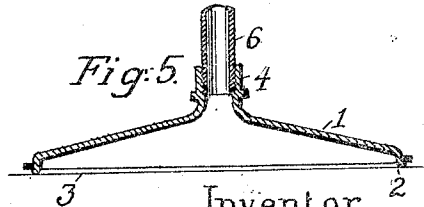


Fig. 5.



Witnesses:

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David T. Kenney,
 by Thomas Ewing, Jr.,
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UNITED STATES PATENT OFFICE.

DAVID T. KENNEY, OF NORTH PLAINFIELD, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE VACUUM CLEANER COMPANY, A CORPORATION OF NEW YORK.

APPARATUS FOR REMOVING DUST.

1,057,347.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Original application filed March 16, 1903, Serial No. 147,968. Divided and this application filed June 6, 1906. Serial No. 320,437.

To all whom it may concern:

Be it known that I, DAVID T. KENNEY, a citizen of the United States of America, residing in the borough of North Plainfield, county of Somerset, and State of New Jersey, have invented new and useful Improvements in Apparatus for Removing Dust, of which the following is a specification.

My invention relates to a hand-implement operating by suction for cleaning in connection with vacuum systems, by which a partial vacuum is produced in the implement. Such a system is, for example, set forth in detail in my application for Letters Patent of the United States, Sr. No. 147,968, filed March 16, 1903, of which this application is a divisional application.

The implement is provided with a rigid tubular handle, the bore of which constitutes the passageway for the dust-laden air, in order that a sufficiently large and free passageway may be contained within a handle tube of light weight and of exterior diameter which will be a convenient hand-hold. The handle extends from the nozzle, when the nozzle is in position for use on the floor, in a direction inclined with the vertical, which is convenient for holding in the hand and operation of the implement, and hence, at an inclination oblique to the plane of the contact lips. Means are provided for coupling a flexible hose to the handle of the implement, this coupling being preferably as remote from the nozzle as possible, since the flexible pipe connected thereto will then interfere the least with the convenient manipulation of the nozzle. The upper end of the handle bearing the coupling is deflected from the line of the body of the handle so that when in operative position the flexible tube will not lead off therefrom in an upward direction, but rather in a downward direction, so that too short a bend or kink in the flexible tube will not be caused by the weight of the tube hanging from the coupling.

In the accompanying sheet of drawings, which forms a part of this application, Figure 1 is a view of the hand-implement embodying my invention, connected to a flexible tube and held in position for use. Fig. 2 is a vertical section through the nozzle of the hand-implement. Fig. 3 is a side elevation of the entire hand-implement. Fig. 4

is a front elevation of the lower part. Fig. 55 is a vertical section of the nozzle of the hand-implement on the line x^5-x^5 of Fig. 3.

A narrow suction-nozzle 1 inclosing an elongated suction-chamber has formed on it a narrow contact surface 2 which is pierced by a narrow slot 3 which is preferably in a straight line and divides the contact surface into two contact lips parallel and in close proximity. The slot is in unobstructed communication with the chamber of the nozzle and is bounded and defined by the lips which lie along the sides and ends. Since these lips form the contact surface of the nozzle, when the nozzle is applied to a floor or other surface to be cleaned the lips and restricted outward mouth of the slot will be brought directly against the floor. Owing to the inevitable irregularity of floors and uncertainty of angle at which the nozzle is likely to be held, the air will find passages under one or both lips and between the lips and the floor through which it will rush with great velocity into the slot and exert a strong sweeping action on the floor. Any fine dust or dirt on the floor will consequently be picked up and carried along by the rapidly moving air. When applied to carpeted floors, the air is drawn upward through the interstices of the carpet and all dust is disentangled and removed without subjecting the fabric to any mechanical action that will wear it away. The slot is ordinarily about a sixteenth of an inch in width for most conditions of use and may vary in length as may be desired. A much wider slot would be objectionable.

The nozzle has a rigid tubular handle and is provided with an air outlet and union 4 for the attachment of the handle. The nozzle is formed in two pieces in order that the interior of the chamber and the slot may be made smooth and freed from all irregularities. The parts are joined along the line 5 usually by brazing. The suction chamber is of sufficient capacity to freely allow the air to pass, is without sharp corners or enlarged portions where the velocity of air could be reduced and the dust be deposited, and the upper wall of the chamber is tapered downwardly from the air outlet in the direction of the ends of the slot.

The handle 6 is a metal tube with an unobstructed bore, which serves to conduct the

air and suspended dust and dirt from the suction chamber in the nozzle. The upper end of the tubular handle is connected through a union 7 with a flexible pipe 8, the other end of which is connected through a union 9 with the other parts of the apparatus for removing the dust and dirt from the air and effecting the movement of the air, set forth in my application for Letters Patent above mentioned.

The unions, bends and interior corners of the implement generally are flush or rounded so that the passageway for the air, dust and dirt therethrough will be free from corners and sharp bends.

The implement as illustrated is particularly suited for cleaning carpets, because by reason of the narrowness of the nozzle, it can be pushed down into the fabric and the cleaning made more effective. The lips of the slot not only lie in the contact surface, but practically form it, the surface being coextensive with the lips, which must be stout enough to resist closure of the slot by

exterior air pressure, and to remain rigid under such pressure as may be put upon the implement by the operator.

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

A cleaner comprising an elongated suction-chamber having an elongated contact-surface formed on one side thereof, and provided with an air-inlet into the suction-chamber through a narrow slot in the contact-surface lying parallel to its longer dimension, a handle set at right angles to the slot and oblique to the plane of the contact-surface, and an air-outlet for the suction-chamber, the upper wall of the suction-chamber being tapered downward from the outlet in the direction of the ends of the slot, substantially as described.

Signed at New York city, N. Y., this 5th day of June, 1906.

DAVID T. KENNEY.

Witnesses:

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SAMUEL W. BALCH.