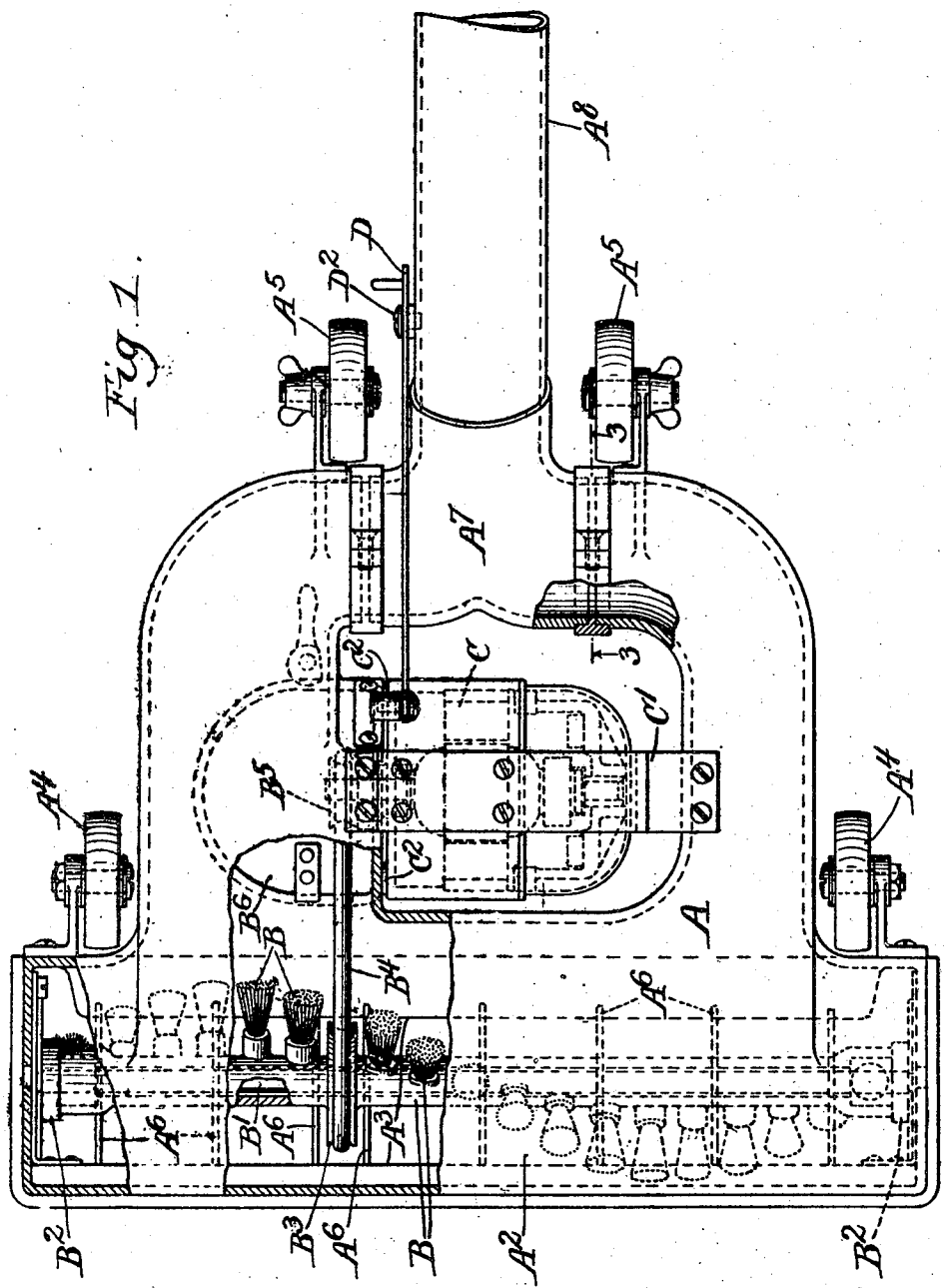
Feb. 19, 1924. 1,483,976

H. E. HOOVER

SUCTION SWEEPER

Filed Nov. 3, 1919 5 Sheets-Sheet 1

Fig. 1.



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Feb. 19, 1924. 1,483,976

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SUCTION SWEEPER

Filed Nov. 3, 1919 5 Sheets-Sheet 2

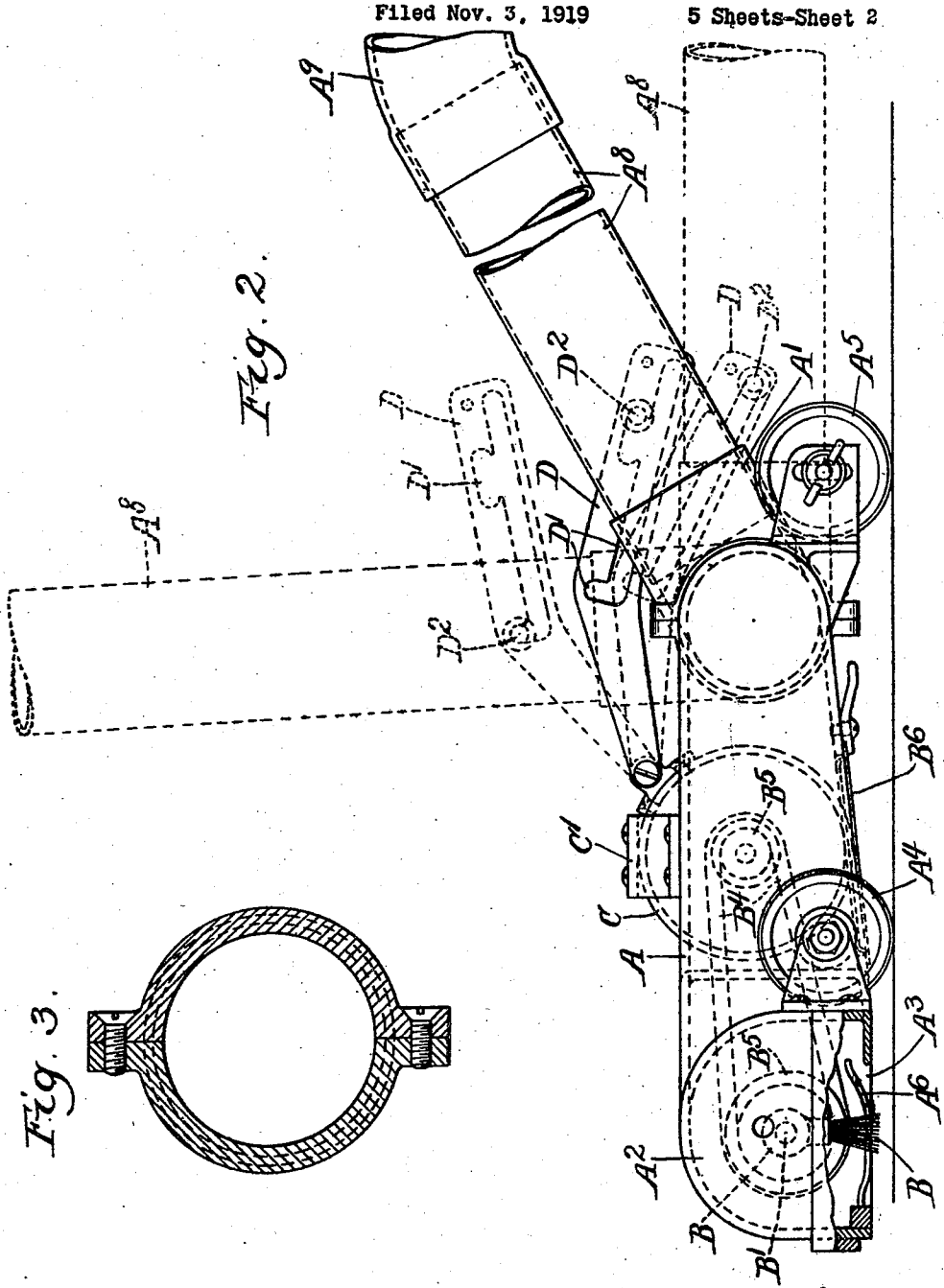


Fig. 2.

Fig. 3.

Witness.
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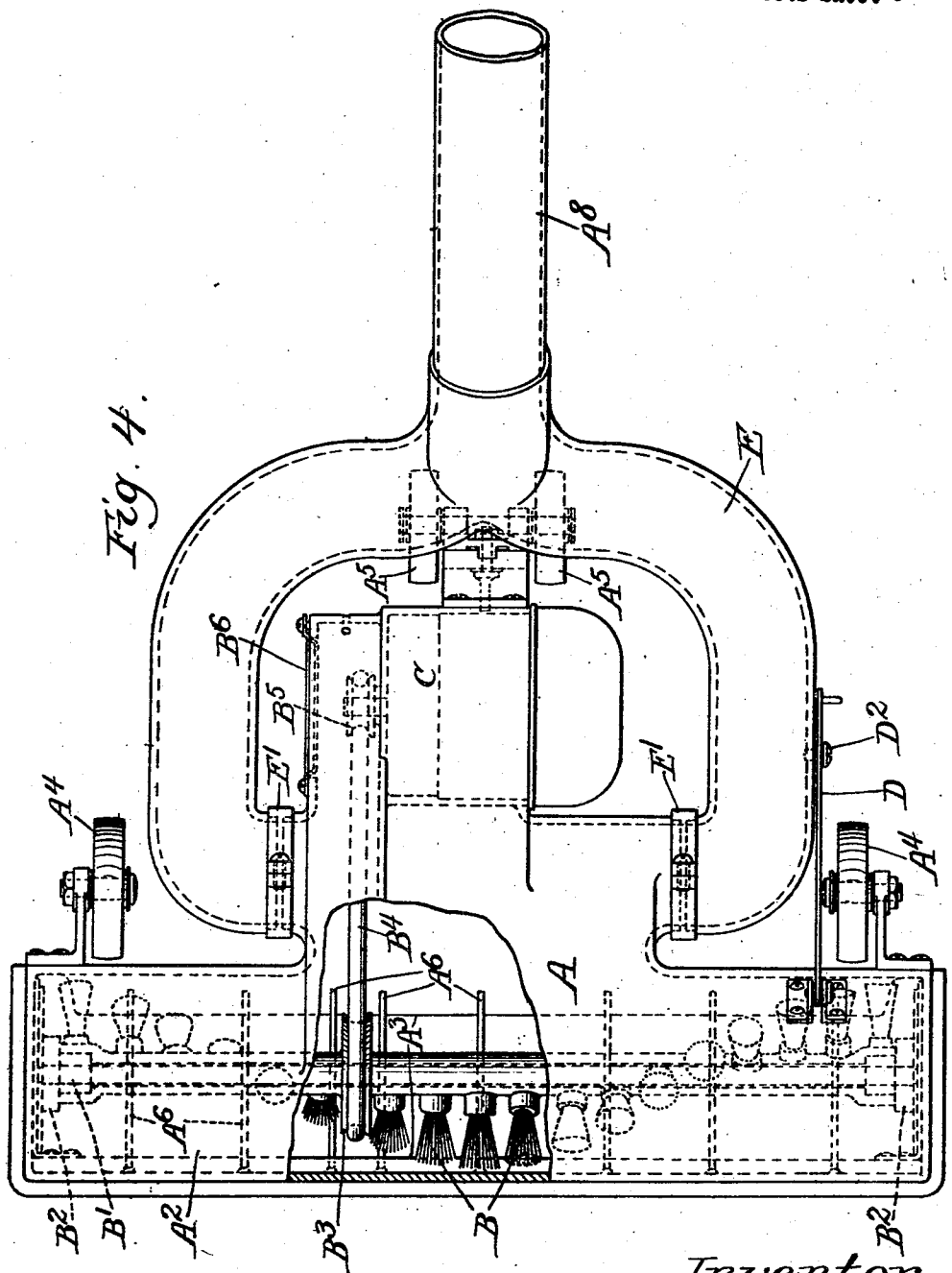
Feb. 19, 1924. 1,483,976

H. E. HOOVER

SUCTION SWEEPER

Filed Nov. 3, 1919 5 Sheets-Sheet 3

Fig. 4.



Witness.

Edward T. Wray

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Feb. 19, 1924. 1,483,976

H. E. HOOVER

SUCTION SWEEPER

Filed Nov. 3, 1919 5 Sheets-Sheet 4

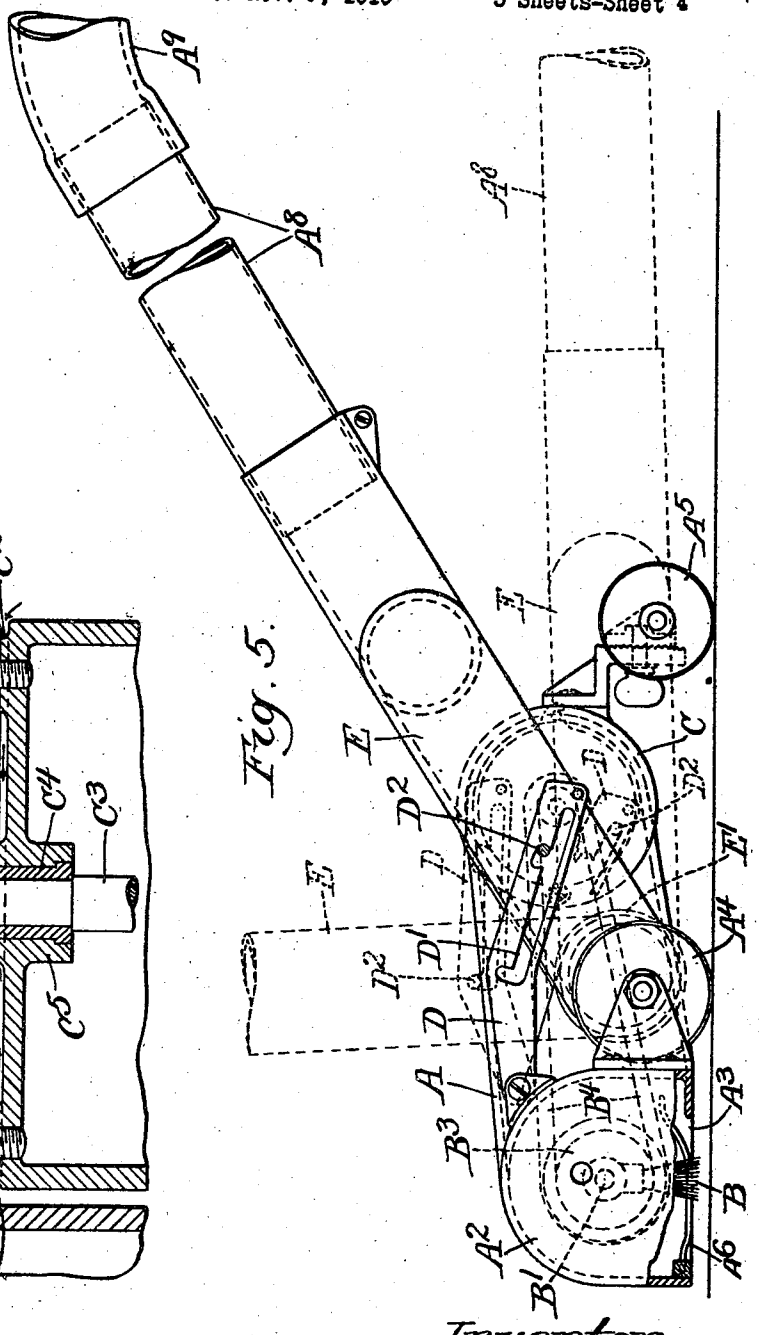


Fig. 5.

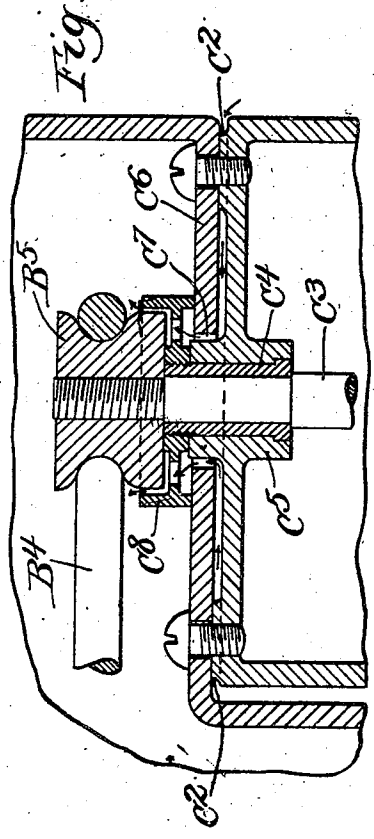


Fig. 6.

Witness.
Edward T. Wray.

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Howard Earl Hoover.
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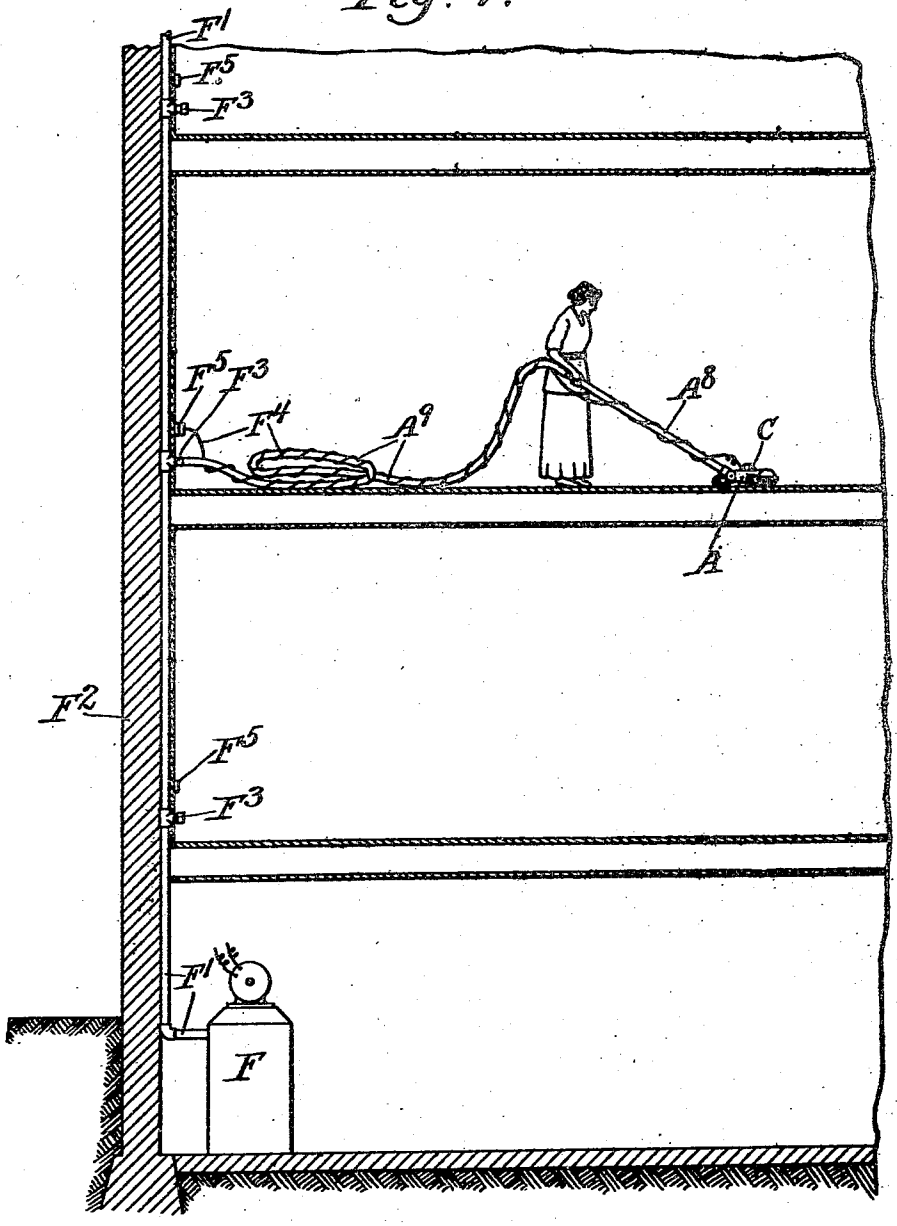
Feb. 19, 1924. 1,483,976

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SUCTION SWEEPER

Filed Nov. 3, 1919 5 Sheets-Sheet 5

Fig. 7.



Witnesses.
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Patented Feb. 19, 1924. 1,483,976

UNITED STATES PATENT OFFICE.

HOWARD EARL HOOVER, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE HOOVER COMPANY, OF NORTH CANTON, OHIO, A CORPORATION OF OHIO.

SUCTION SWEEPER.

Application filed November 3, 1919. Serial No. 335,343.

To all whom it may concern:

Be it known that I, HOWARD EARL HOOVER, a citizen of United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Suction Sweepers, of which the following is a specification.

My invention relates to a combined installed plant and motor driven brush apparatus for suction sweeper. Generally speaking, the object of this invention is to provide means whereby a motor driven carpet agitating device and particularly a beating brush or a brushing and beating apparatus motor driven of any kind can be used in and with a nozzle while the suction apparatus associated therewith is placed at a distance, as for example in a stationary plant in the basement of the building. In the preferred form of my invention, I use a brush which has both a beating and a brushing effect and I drive it at a high rate of speed by means of a motor mounted on and associated with the brush nozzle. A flexible conduit leads from the handle to the pipe or conduit which connects with the installed or stationary suction plant so that the nozzle can be moved freely about the room where the sweeping or cleaning is to be done. This flexible conduit may connect with the hollow handle portion which is connected with the nozzle as shown herein or may connect directly with the nozzle body as shown in an application of even date.

In the preferred form of my device, the nozzle is provided with a relatively wide open mouth and this is preferably supported above the floor so that the carpet or floor covering will rise thereto and the mouth will be big enough to furnish a proper field of operation for the beater and the brush or the beating brush.

My invention is illustrated in the accompanying drawings wherein—

Fig. 1 is a plan view with parts broken away;

Fig. 2 is a side elevation with parts broken away.

Fig. 3 is a section along the line 3—3 of Fig. 1;

Fig. 4 is a plan view of an alternative form with parts broken away;

Fig. 5 is a side elevation of the same;

Fig. 6 is a detail;

Fig. 7 is a diagrammatic view of an entire plant.

Like parts are indicated by like characters in all the figures.

A is a movable suction head having along its front side an enlarged brush chamber, A^2, having a downwardly open wide suction mouth, A^3, arranged to be held above the floor by the rollers A^4 adjacent the suction mouth. The arrangement is such that adjustment of the rollers A^5 by rotating the entire suction head about the rollers A^4 will change the height of the suction mouth or nozzle above the floor. A^6 A^6 are brush guard fingers extending across the open mouth to make it impossible for any rug or floor covering to be drawn up too far into the open mouth. Leading rearwardly from the brush chamber A^2 is an enlarged bifurcated suction chamber, the two arms of which communicate with the brush chamber adjacent its two ends and are joined in a rotatable conduit connection sleeve A^7. The arrangement is such that the air may be drawn off through the combined handle and pipe A^8 communicating with the sleeve A^7, and because a cross section of the air passage as shown decreases from the nozzle or suction mouth rearwardly toward the sleeve, the suction and velocity at the suction mouth will be less than that in the pipe.

B is a combined beating and sweeping brush, the two separate functions of which are, by its shape and arrangement, combined in one unit, though obviously the beating and sweeping devices might be separated. This brush is rotatably mounted upon the shaft B^1 which shaft is anchored at either end in the housing. B^2 B^2 are thread guards surrounding the ends of the bearings to protect the bearings where the brush bears on the shaft from fouling. B^3 is a pulley on the brush whereby the belt B^4 which is driven in turn by the pulley B^5 rotates the brush. B^6 is a removable hand hole cover in the bottom of the head, whereby access may be had to the pulley B^5 for the purpose of adjustment of the belt.

C is a motor enclosed within a casing as indicated. It is located in the aperture through the head which is surrounded by and formed between the bifurcated arms of the suction chamber. The motor may be suspended in this aperture by straps or brackets

C^1 C^1 adapted to be screwed or riveted to the portable head as indicated. A further or substitute means for mounting the motor on the head is provided as follows: C^2 C^2 are bosses projecting from the forward end of the motor housing and adapted to engage the wall of the aperture or pocket in which the motor is mounted, to prevent a direct contact between the motor and such wall, thus leaving an air passage. C^3 is a motor shaft. It is mounted at one end for rotation in the bearing sleeve C^4, in the boss C^5. The wall of the head C^6 is apertured as at C^7 so that the boss C^5 may extend inwardly. C^8 is a thread guard screw-threaded on the bearing sleeve C^4 in the form of a cup having a perforated diaphragm intermediate its ends. Air may enter from the space between the motor and housing wall through the annular space between the boss C^5 and the wall of the aperture C^7 into the bottom of the cup, thence it may pass through the perforations in the diaphragm in the cup to be discharged around the base of the pulley B^5, thence such air will pass, due to the suction, forwardly or into the main current of air and thus keep the motor bearing clean.

A^8 is a combined handle and conduit by which the portable suction head may be manipulated. It is mounted at its lower end on the hose pipe connection sleeve A^7, rotatably mounted between the two arms of the bifurcated suction chamber.

D is a handle stop pivoted on the portable head and slotted as at D^1 to engage the stop pin D^2 on the conduit A^8 whereby it may be locked in the upright position shown in dotted lines, may be allowed to assume the low position shown in dotted lines for cleaning under furniture and the like or may be held in full line position free to have a slight angular movement as the hand of the operator swings back and forth.

In Figs. 4 and 5, I have shown an alternative form of my invention wherein I provide a yoke shaped conduit member E, rotatably connected to the suction chamber at points E^1 E^1.

In this form of the device the motor is mounted as previously suggested or in any other desired manner at the rear of the suction chamber but it is still surrounded by the two arms of the suction chamber. These arms are pivotally connected to the suction chamber proper somewhat as indicated though in respect to these arrangements the drawing is to be considered as diagrammatic. The structure, however, involves the idea of the handle and conduit bail or yoke connected therewith, its two ends being pivotally attached to the head so as to establish a connection between the combined handle and conduit and the suction chamber of the head.

Referring to Figure 7, A is the suction head C is a motor mounted on it. A^8 is a combined handle and conduit by which it is manipulated. A^9 is a flexible continuation of the conduit.

F is an installed suction plant F^1 is a suction conduit, in the wall F^2 of a building. F^3 F^3 are conduit outlets adapted to receive the flexible conduit A^9. F^4 is an electric conductor by means of which current is furnished to the motor C. F^5 F^5 are outlet connections adapted to receive the conductor F^4.

I claim:

A suction sweeper comprising a casing having a nozzle provided with means whereby it is adapted be be supported above the surface to be cleaned and an inlet in combination with a combined handle and conduit pivotally connected with the casing, a carpet agitating device mounted near the inlet a drive housing extending rearwardly from the casing, a motor on said housing and a driving connection between the motor and a carpet agitating device within said housing, said motor and said drive housing being in rear of the pivotal connection of the combined handle and conduit to the casing.

In testimony whereof, I affix my signature in the presence of two witnesses this 13th day of October, 1919.

HOWARD EARL HOOVER.

Witnesses:
MILDRED H. MACKE,
EDNA B. PETERSON.