No. 784,801. PATENTED MAR. 14, 1905.

A. E. MOORHEAD.

CARPET CLEANING APPARATUS.

APPLICATION FILED JULY 1, 1904.

2 SHEETS—SHEET 1.

Fig. VII

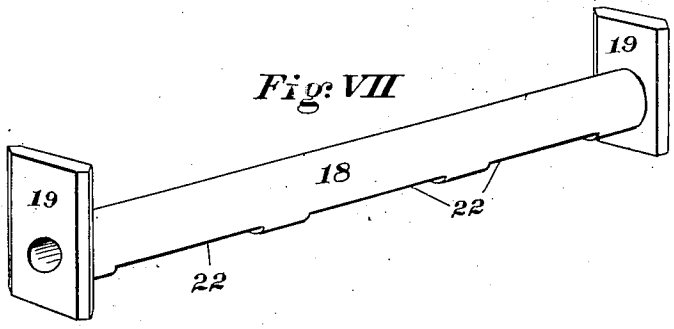


Fig. VI

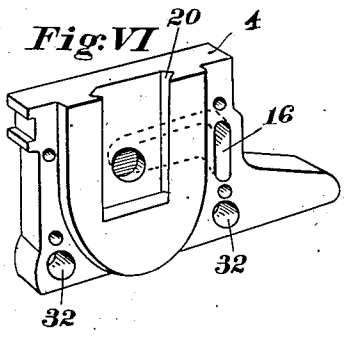


Fig. I

WITNESSES:

Elmer Wickes.

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INVENTOR:

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Fig. II

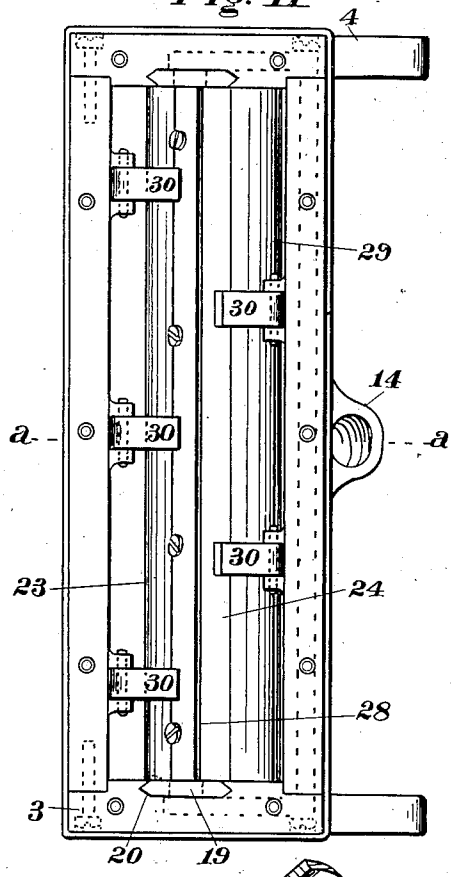


Fig. IV

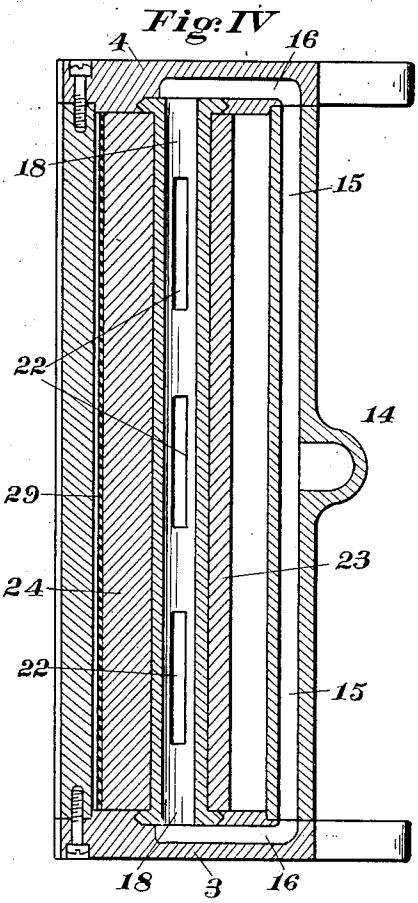


Fig. III

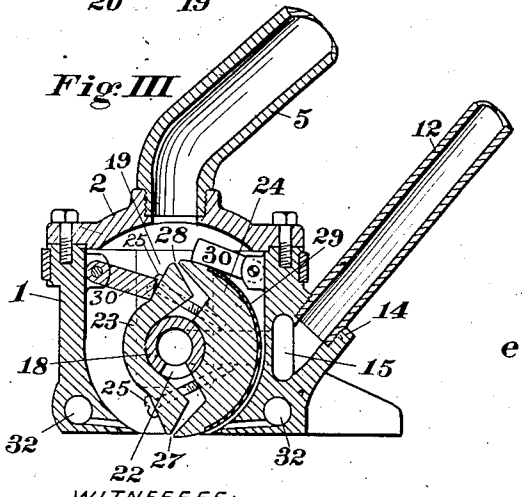
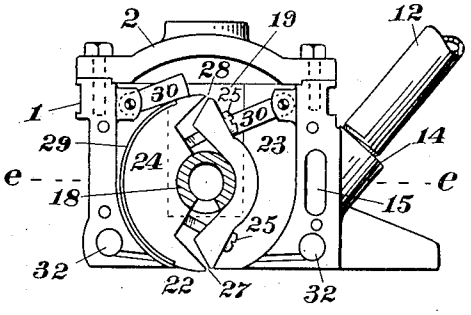


Fig. V



WITNESSES:

Elmer Wickes.

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No. 784,801. Patented March 14, 1905.

UNITED STATES PATENT OFFICE.

ALBERT E. MOORHEAD, OF OAKLAND, CALIFORNIA.

CARPET-CLEANING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 784,801, dated March 14, 1905.

Application filed July 1, 1904. Serial No. 214,934.

To all whom it may concern:

Be it known that I, ALBERT E. MOORHEAD, a citizen of the United States of America, residing at Oakland, county of Alameda, and State of California, have invented certain new and useful Improvements in Carpet-Cleaning Apparatus; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to pneumatic carpet-cleaning apparatus of the portable species which operate on the carpet as it lies upon the floor.

My improvements consist, primarily, in providing such devices with a reversible pair of nozzles which shall direct the pneumatic current upon the surface to be cleaned at the proper angle, whether the apparatus is advancing or retreating, thus making the device usable in either direction without loss of time in turning.

The improvements also consist in the minor details of construction which contribute to the reduction of said main conception to practical form.

To these ends I construct apparatus substantially as shown in the drawings.

Figure I is a perspective view of a carpet-cleaning apparatus constructed according to my invention; Fig. II, a top view of the main body of the apparatus with the covering-plate removed; Fig. III, a transverse section through Fig. II on the line *a a* with the covering-plate in place; Fig. IV, a horizontal section through Fig. V on the line *e e;* Fig. V, an end view with the end covering-plate removed; Fig. VI, a perspective view of one of the end plates removed, and Fig. VII a view in perspective of an air-conveying tube to supply the nozzles.

In apparatus of the character to which my invention belongs it is found necessary to loosen and raise the dirt and dust from carpets by the forcible impingement of a jet or jets of air oblique to the surface of the carpet, which dust and dirt are preferably conveyed away by a current of air induced by a fan or pump that produces a partial vacuum in and from the collecting-chamber in which the nozzles operate.

Referring to the drawings and especially to Fig. I, 1 is the main casing; 2, a removable covering-plate for the same. 3 and 4 are detachable end plates, and 5 a hollow tube through which the dust and dirt are removed, forming also a stem by which the machine is operated by means of a handle 7. The handle 7 is preferably made integrally with the angle-chamber 8, having a nipple 9 to receive a hose or exhaust-pipe 10, also forming a support and connection between the air-pressure pipe 12 and a hose 13, communicating with some source of air under pressure.

Referring next to the details and means of loosening and raising the dirt and dust under pressure introduced through the hose 13 and pipe 12, the latter enters the main casing 1 through a nipple 14, passages 15 in the main frame, and passages 16 in the heads 3 and 4 to the ends of the tube 18 and from this to the nozzles 27 and 28, that have an oblique position, so as to act upon and raise the pile of the finer kinds of carpet. The tube 18 is provided at the ends with flanges 19, that fit into angular seats 20, formed in the end parts 3 and 4, as seen in Fig. III, and is held therein, the cover 2, when that is in place, serving as a tie member to connect the apparatus longitudinally. In the side of the tube 18, preferably at the bottom, are formed outlets or passages 22 for air that escapes through a reversible nozzle-piece consisting of the members 23 24, secured together, preferably, by screws 25 to form the nozzles 27 28, which nozzle-piece mounted loosely on said tube 18 moves angularly thereon by means hereinafter described, so as to present one of the nozzles at the proper angle to efficiently direct the current of air escaping from passage 22 against the surface to be cleaned, whether the apparatus is advancing or retreating, as illustrated in Figs. III and V. The transposition of the nozzles 27 and 28 takes place automatically when the course of the apparatus is reversed by means of a frictional covering 29 around the back of the part 24, which engages

the surface of the carpet and revolves the nozzles on the tube 18, accordingly as the apparatus is pushed forward or drawn backward.

To arrest the nozzles 27 28 in their proper position each way, I provide hinged pawls 30, that automatically engage and stop the nozzles 27 28, as shown in Figs. III and V, several such pawls, as seen in Fig. II, being supplied to avoid twisting strain on the nozzle parts 23 24.

Dust and dirt loosened and raised by the nozzles 27 28 are instantly drawn off through the pipe 5, which connects to apparatus that maintains a partial vacuum and receptacle for deposit. (Not shown.)

In case the partial vacuum produced by the current in the pipe 5 causes a pressure on the main case such as to offer resistance to its movement external air is admitted through the passages 32 by adjusting the hinged covers 33 accordingly. The air thus admitted is confined to one side at a time only, and that the operating side, since the revolving part 24 closes the air-inlet on the operative side, as shown in Figs. III and V.

Having thus explained the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is —

1. In a carpet-cleaning device, a movable casing, means to conduct air under pressure thereto and for conveying the mingled air and dust therefrom, a pair of nozzles in said casing, for directing the entering air-current at the proper angle against the surface to be cleaned, and means for bringing said nozzles into action separately and alternately, accordingly as the device is moved forward or backward over a carpet, substantially as specified.

2. In a carpet-cleaning device, a movable casing, means to conduct air under pressure thereto, and for conveying the mingled air and dust therefrom, a pair of nozzles in said casing reversibly mounted on a common axis, and means for automatically reversing the position of said nozzles so as to bring one of the same into position for directing the air-current at the proper angle against the surface to be cleaned while the other nozzle is held out of action, accordingly as the device is moved forward or backward, substantially as specified.

3. In a carpet-cleaning device, a movable casing, a pipe to conduct air under pressure thereto, a centrally-mounted slotted tube therein with which said pipe is connected, a pair of nozzles axially mounted on said tube, communicating alternately with the slot therein, means for automatically reversing the position of said nozzles on the tube to bring them alternately into communication with said slot, accordingly as the device is moved forward or backward, whereby one of said nozzles presents the air-current to the surface to be cleaned at the proper angle whether the device is moved forward or backward, and means for conveying away the mingled air and dust from the casing, substantially as specified.

4. In a carpet-cleaning device, a movable casing, a pair of nozzles axially mounted therein, means for alternately reversing the position of said nozzles to bring each into position to direct the air-current at the proper angle against the surface to be cleaned accordingly as the device is moved forward or backward, a pipe to conduct air under pressure to said nozzles, a pipe to convey away the mingled air and dust from the casing, and automatically-acting pawls to arrest and hold said nozzles at the required angle in either position, substantially as specified.

5. In a carpet-cleaning device, a movable casing, a slotted tube centrally mounted therein, a pair of nozzles axially mounted on said tube, communicating alternately with the slot therein, a pipe to convey away the mingled air and dust from the casing, means to automatically reverse the position of said nozzles accordingly as the device is moved forward or backward, and means to automatically stop said nozzles at the proper angle to direct the current efficiently against the surface to be cleaned, whether the device is moved forward or backward, substantially as specified.

6. In a carpet-cleaning device, a movable casing, the ends of said casing being detachable, a central slotted tube mounted in said ends, a pair of nozzles axially mounted on said tube, communicating alternately with the slot, means for automatically reversing the position of said nozzles as the casing is moved forward or backward, whereby one of them is brought into position at the proper angle for directing the current efficiently against the surface to be cleaned, means for conducting air under pressure to said slotted tube, and means for conveying away the mingled air and dust from said casing, substantially as specified.

7. In a carpet-cleaning device, a movable casing, a pair of reversible nozzles axially mounted in said casing, means to conduct air under pressure to said nozzles, and means for conveying away the mingled air and dust from the casing, said casing being provided with adjustable air-inlets for modifying the degree of air-exhaustion therein, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT E. MOORHEAD.

Witnesses:
ELMER WICKES,
ALFRED A. ENQUIST.