UNITED STATES PATENT OFFICE.

WALTER ROWBOOTHAM, OF MONTREAL, QUEBEC, CANADA.

APPARATUS FOR CLEANING CARPETS AND LIKE FABRICS.


To all whom it may concern:

Be it known that I, WALTER ROWBOOTHAM, of the city of Montreal, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Apparatus for Cleaning Carpets and Like Fabrics, of which the following is a full, clear, and exact description.

My invention has relation to a device for cleaning carpets and similar fabrics, and the invention consists in the construction and arrangements of parts, as will be hereinafter described and particularly pointed out in the claims.

In the drawings which illustrate my invention—Figure 1 is a side elevation partly in section of the apparatus. Fig. 2 is a plan view of same. Fig. 3 is a vertical longitudinal section on the line 1-2 of Fig. 2. Fig. 4 is a sectional view of the dust receiving cover on the line 3-4 of Fig. 1. Fig. 5 is a section of the fan clutch on the line 5-6 of Fig. 1. Fig. 6 is an elevation of the gearing for driving the fan.

Referring to the parts, 7 designates the floor line upon which the apparatus is adapted to run, said machine being mounted upon wheels in the usual manner. 8 designates a fan chamber having the eccentric inner wall 9. A fan comprising side plates 10 secured to the shaft 11 by means of the pins 12 and supporting between them the curved blades 13, revolves within the chamber 8. The fan discharges through a tapering passage 14 which terminates in a nozzle 15 located at the front of the machine close to the floor. Said fan being adapted to force a jet of air from the nozzle 15 downwardly upon the carpet or other fabric to be cleaned, while the suction from the fan draws in air at the aperture 16. The current of air moves up the passage 17 carrying with it the dust dislodged from the carpet by the action of the air jet issuing from the nozzle 15. At the intersection of the aperture 16 and the terminal of the tapering passage 14, I provide an intermediate air inlet 17, through which is also drawn air by means of the suction from the fan, which facilitates the forcing of foreign substances through the passage 17. The dust is discharged from the nozzle 18 of the conduit 17 into a receiver 19. This dust is directed against the baffle plate 20 which is provided at the top with a screen 21, through which the fan draws in its air. The air after passing through the screen 21 enters the suction pipes 22, which open into the ends of the receiver behind the baffle plate 20. The fan is driven from the shaft 23, which is journaled in the brackets 24 and receives its motion from the supporting wheels 25 which are fixed to it. The wheels are provided with rubber tires 26 to insure a good grip on the floor and to diminish the noise of the device.

The rotation of the shaft is conveyed to the fan through a gear train comprising a plurality of pulleys 27 connected to each other by the belts 28 and to the fan shaft 11 by a ball clutch, as shown in Figs. 1 and 5. This clutch comprises a disk 29 fixed to the shaft 11 by a pin 30 and provided with a plurality of recesses 31 in the face thereof. The disk revolves within a second recessed disk 32 which is loose on the shaft and belted to the gear train. A small ball 33 is located in each of the recesses 31 and is maintained in place by a cover 34. As long as the disk 32 revolves in the direction of the arrow (Fig. 1) the balls 33 will be pinched in the pointed ends of the recesses 31 and will connect the two disks. As soon as the direction of the disk 32 is reversed, the balls are loosened and fall to the large ends of the recesses leaving the two disks free and independent.

The gear train and clutch are inclosed within a housing 35. The receiver 19 is provided with a removable end 36 having a flange 37 circumferentially recessed to receive one half of a rubber sealing ring 38 which engages the inner face of the receiver, holding the cover securely and forming a dust-tight joint. The cover is, for convenience, provided with a handle 39. The device may be operated by means of a handle inserted in the socket 40 attached to the bracket 41, the extremities of which engage the shaft 23 and are provided with suitable bushings 42.

The operation of the device will be readily understood from the foregoing description and drawings.

Having thus described my invention what I claim is:

1. A carpet cleaning device, comprising a pair of running wheels, a fan or blower connected therewith, means for clutching the fan shaft for operating said fan in one direction only, a dust receiver, means for directing a jet of air downwardly on the fabric to be cleaned, a conduit for conveying the dust raised by said jet into said receiver, and a connecting conduit between the fan,
casing and dust receiver, substantially as specified.

2. A carpet cleaning device comprising a pair of supporting wheels, a fan or blower connected therewith, means for rotating said fan when the wheels are driven in a forward direction, a dust receiver, a downwardly-turned air conduit leading from the fan to the fabric to be cleaned, and terminating in a nozzle, a dust conduit leading from near said nozzle into said receiver, a baffle plate in said receiver, and connecting air conduits between the receiver and fan casing, one extending on each side of the casing, substantially as specified.

3. A carpet cleaning device, comprising supporting wheels, a casing, a fan journaled within said casing, a gear train driven by said wheels, a clutch connecting the gear train with said fan, a dust receiver, a downwardly-tapered air passage leading from the fan casing to the fabric to be cleaned, a dust conduit leading into said receiver, a diaphragm in said receiver, a meshed screen connecting the diaphragm with the wall of the receiver, and an air conduit opening behind said diaphragm and leading into the fan casing, substantially as specified.

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

WALTER ROWBOTHAM.

Witnesses:

STUART R. W. ALLEN,
WILLIAM G. ARMSTRONG.