June 25, 1940. R. E. DUNBAR 2,205,877

SURFACE CLEANING TOOL

Filed Sept. 17, 1937

Fig.1.

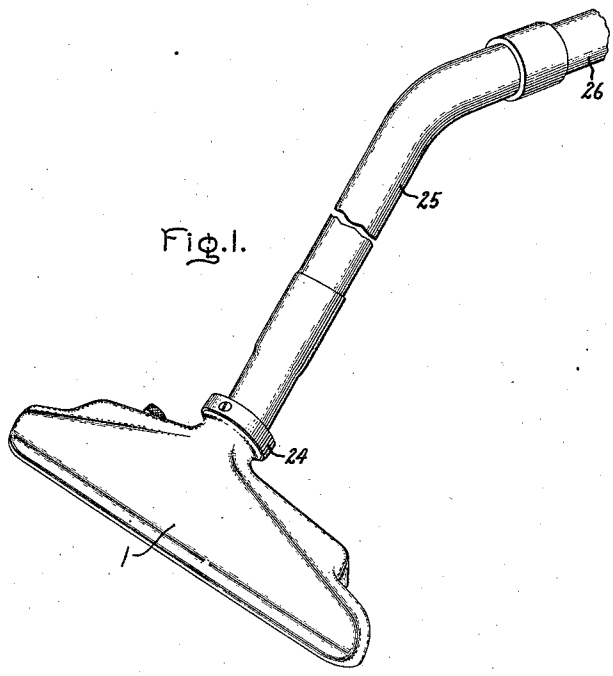


Fig.2.

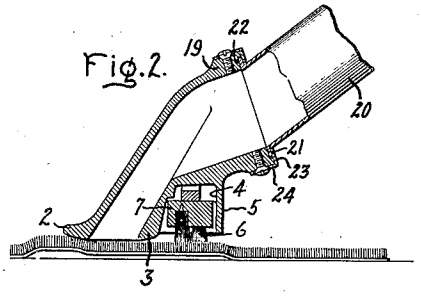


Fig.3.

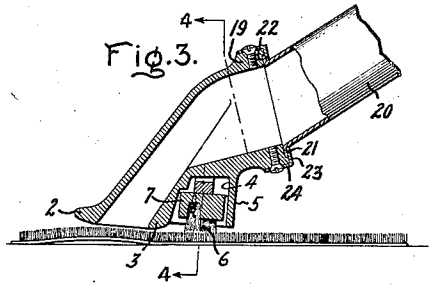


Fig.4.

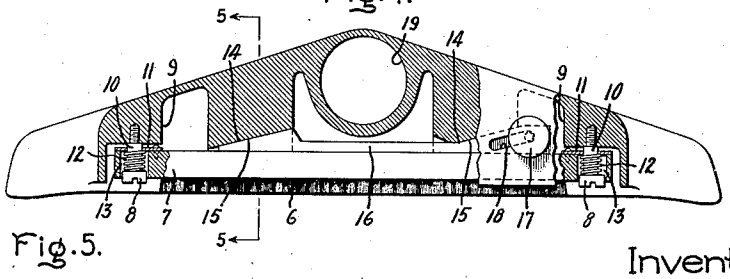
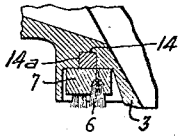


Fig.5.



Inventor:
Ralph E. Dunbar,
by Harry E. Dunbar
His Attorney.

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UNITED STATES PATENT OFFICE

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SURFACE CLEANING TOOL

Ralph E. Dunbar, East Cleveland, Ohio, assignor to Electric Vacuum Cleaner Company, Inc., Cleveland, Ohio, a corporation of New York

Application September 17, 1937, Serial No. 164,369

1 Claim. (Cl. 15—158)

The present invention relates to surface cleaning tools of the type having a suction nozzle for removing dirt from the surface being cleaned.

The object of my invention is to provide an improved construction in surface cleaning tools of this type, and for a consideration of what I believe to be novel and my invention, attention is directed to the following description and the claim appended thereto.

In the accompanying drawing, Fig. 1 is a perspective view of the surface cleaning tool embodying my invention; Fig. 2 is a sectional end elevation showing the cleaning tool in its normal position while cleaning a floor covering; Fig. 3 is a sectional elevation showing the cleaning tool in a tilted position; Fig. 4 is a sectional view taken on line 4—4 of Fig. 3; and Fig. 5 is a fragmentary sectional view taken on line 5—5 of Fig. 4.

Referring to the drawing, there is shown a cleaning tool which comprises a suction nozzle 1 having front and rear surface contacting lips 2 and 3. As shown in Fig. 4, the ends of the lips are lower than the intermediate portions. During use, the intermediate portions of the nozzle lips are therefore supported slightly above the surface being cleaned. If the nozzle is used for cleaning a floor covering, the floor covering will therefore be raised from the floor (Fig. 2) against the intermediate portions of the nozzle lips and will, accordingly, be subjected to flexing as the nozzle is moved across the floor covering. The flexing of the floor covering assists in loosening the embedded dirt so that the dirt is more effectively removed by the suction.

On the rear side of the nozzle is a downwardly facing recess 4 formed by end and rear walls 5 integral with the nozzle. In the recess is a brush comprising bristles 6 fixed in a backing member 7. The brush is supported in the recess by screws 8 threaded into bosses 9 in the top walls of the recess and having cylindrical portions 10 which slidably project through plates 11 secured to the top of the backing member 7. Between the plates 11 and the heads of the screws are helical compression springs 12 which urge the brush upward in the recess. The screws 8 extend through sockets 13 in the backing member, the sockets being of larger diameter than the heads of the screws. In the top wall of the recess are grooves 14a (Fig. 5) having inclined surfaces 14 at the bottom thereof which cooperate with inclined surfaces 15 on a slide 16 arranged in the grooves and having its lower edge bearing on the top of the backing member 7. By moving the slide 16 to the left, as viewed in Fig. 4, the brush is forced outward in the recess against the force of the springs 13. When the slide is moved to the right, the springs 13 move the brush inward and hold it against the lower edge of the slide. The inclined surfaces 14 and 15 are in effect wedge or cam members. The slide 16 is held in the adjusted position by a thumb screw 17 which projects through an inclined slot 18 in the rear wall of the recess. When the thumb screw is tightened, the slide 16 is clamped against the rear side of the grooves 14a and frictionally held in position. With this arrangement the brush has a light brushing effect on the floor covering. When a heavier brushing effect is desired, for example, in order to remove lint, the tubular handle 25 is lowered, tilting the suction nozzle to the position shown in Fig. 3. In this position the suction nozzle is supported by the bristles 6 and the front and rear nozzle lips are raised slightly above the floor covering. Since the full weight of the suction nozzle rests on the bristles a vigorous brushing action is obtained which will loosen any lint. The brushing action may be increased by exerting a downward pressure on the handle 25. At the same time, there is a considerable inrush of air around the nozzle lips which entrains the loosened lint. The greater portion of this air inrush occurs around the front nozzle of the lip since this lip is lifted further due to the pivoting about the bristles of the brush.

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

In a vacuum cleaner, a surface cleaning tool having a suction nozzle provided with front and rear surface engaging lips, walls providing a downwardly facing recess in the rear of the suction nozzle, a brush in the recess, spring means urging the brush upward in the recess, cooperating wedge members serving as an adjustable abutment limiting upward movement of the brush, one of said members being movable and having a part projecting through the rear wall of the recess for holding it in its adjusted position, said brush serving as a support for the tool when the tool is tilted to raise the front lip of the nozzle from the surface being cleaned.

RALPH E. DUNBAR.