

Oct. 25, 1932.

N. H. LOSEY

1,884,013

SUCTION CLEANER

Filed April 20, 1927

FIG. 1.

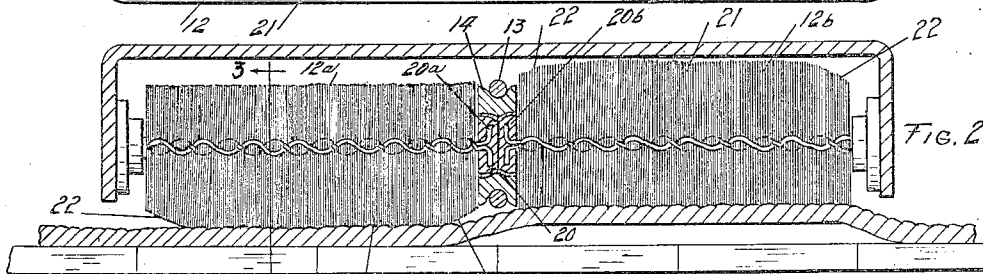
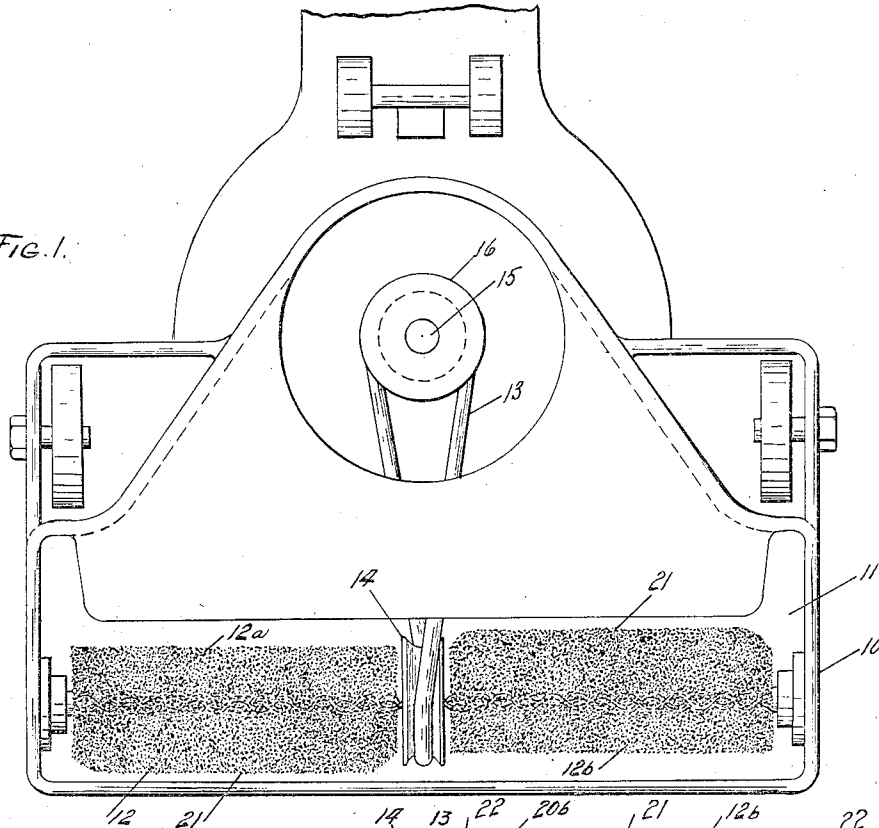


FIG. 2.

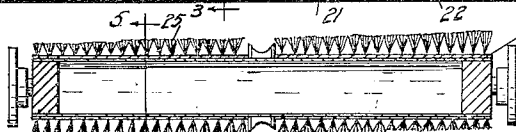


FIG. 4.



FIG. 6.

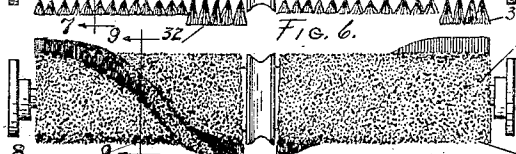


FIG. 8.



FIG. 5.

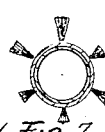
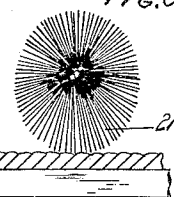


FIG. 7.



FIG. 9.

FIG. 3.



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SUCTION CLEANER

Application filed April 20, 1927. Serial No. 185,254.

This invention relates to suction cleaners.

The general purpose of the invention is to provide in the suction inlet of the usual nozzle of a vacuum cleaner a combined brushing and beating element by which a continuous brushing action is maintained, coupled with periodic beating or shaking action on a floor covering, the suction drawing the floor covering up against the combined brushing and beating element.

More particularly it is the object of the invention to provide a rotary brush in a vacuum cleaner with areas thereof of greater radius than other areas to impart a beating or shaking as well as a brushing action on the floor coverings.

The foregoing and other objects are obtained by the devices illustrated in the accompanying drawing and described below, it being understood that the invention is not limited to the particular forms herein shown and described.

Of the accompanying drawing,

Figure 1 is a bottom plan of a suction cleaner embodying the invention;

Figure 2 is a vertical section through the nozzle of the cleaner shown in Figure 1, as it appears in operative relation to a floor covering;

Figure 3 is a section on line 3—3 of Figure 2;

Figure 4 is a longitudinal section through one modified form of brush;

Figure 5 is a section on line 5—5 of Figure 4;

Figure 6 is an elevation of another modified form of brush;

Figure 7 is a section on line 7—7 of Figure 6;

Figure 8 is an elevation of another modified form of brush; and

Figure 9 is a section on line 9—9 of Figure 8.

Referring to the drawing, the numeral 10 designates the usual nozzle of a motor-operated suction sweeper. Journaled in the nozzle so as to operate in the inlet 11 thereof is a combined brush and beater 12 which may be driven in any suitable manner, for example, by the central drive shown, including

a belt 13 trained over a central pulley 14 on brush 12. Belt 13 may be driven from a shaft 15 by a pulley 16, shaft 15 being driven by the rotor of the suction fan (not shown).

The brush 12 herein shown may be constructed in two sections 12^a and 12^b of twisted wire core brushes, the outer ends of which are journaled in the nozzle in any suitable way and the inner ends of which may be directly connected to pulley 14, but in the form shown in Figure 1 are connected to a member 20 journaled in pulley 14 so as to be capable of rotating with respect thereto. Member 20 may include sections of vulcanized rubber 20^a and 20^b in which the inner ends of brushes 12^a and 12^b have been embedded the sections 20^a and 20^b being cemented or vulcanized together.

Each section 12^a and 12^b of the brush is shown with longer bristles as at 21, 21 on one side than on the other so that the periphery of the brush is eccentric with respect to the core thereof (Figure 3). The eccentricity is preferably in opposite directions on opposite sides of the center of the element, as shown, and adjacent the ends the bristles are cut away as at 22, 22 to prevent "marking" of a floor covering.

In the forms shown in Figures 4 and 5, the brush 25 is rotatably mounted on a rotor 26 so that it will rotate relatively thereto as it hits the floor covering and the eccentricity of the brush periphery gradually changes from one end of the brush to the other, being substantially concentric with the brush axis at the center. This provides, in addition to the beating action alternately on opposite sides of the center, a longitudinal oscillatory movement of the brush periphery which shakes or vibrates the floor covering transversely of the line of travel of the cleaner.

In the form shown in Figures 6 and 7, the brush 30 rotatable on rotor 31 is formed with raised patches 32 of bristles which may be arranged in helical or other formation to hit a floor covering in succession in any desired order.

The form of brush 35 shown in Figures 8 and 9 is rotatable on rotor 36 and has thereon a raised helical continuous rib of bristles.

adapted to impart a beating action to a floor covering and also a lateral or transverse shaking action thereto.

In all forms of the invention the raised
5 bristles serve to beat and shake a floor covering with a positive, yet not too strenuous, action thereon, in the preferred forms the brushes slipping or rotating as they hit and the bristles also yielding as will be understood.
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Modifications of the invention may be resorted to without departing from the spirit thereof or the scope of the appended claims.

What is claimed is:

15 1. A suction cleaner having a suction nozzle provided with an inlet, a rotor above the inlet, a brush rotatably mounted on the rotor so as to be operable in the inlet, the only axis of rotation of the brush being coincident with
20 the axis of the rotor, said brush having a pair of equal sections, the peripheries of said sections being oppositely eccentric to the axis of the rotor, and means for driving said rotor.

2. A suction cleaner having a suction nozzle provided with an inlet, a rotor above the inlet, a brush rotatably mounted on the rotor so as to be operable in the inlet and having its only axis of rotation coaxial with said rotor, said brush having sections, the peripheries of
25 said sections being oppositely eccentric to the axis of the rotor, and means for driving said rotor.
30

3. A suction cleaner having a suction nozzle provided with an inlet, a rotor above the inlet, a brush rotatably mounted on the rotor so as to be operable in the inlet and having its only axis of rotation coaxial with said rotor, said brush having its periphery eccentric to the axis of the rotor, and means for
35 driving said rotor.
40

4. A suction cleaner having a suction nozzle provided with an inlet, a rotor in said nozzle above the inlet, a brush rotatably mounted on the rotor, the axis of rotation of
45 the brush being coincident with the rotor axis and horizontally disposed so as to be parallel to a floor covering, said brush having portions of its periphery extended farther from said brush axis than other portions to impart
50 a beating action to a floor covering, and means for driving said rotor.

5. A suction cleaner having a suction nozzle provided with an inlet, a rotor in said nozzle above the inlet, a brush mounted on the rotor, the axis of rotation of the brush being
55 coincident with the rotor axis and horizontally disposed so as to be parallel to a floor covering, said brush having portions of its periphery extended farther from said axis than other portions to impart a beating action to a floor covering, and means for driving
60 said rotor.

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