March 24, 1936. G. E. LOFGREN 2,035,240

VACUUM CLEANER NOZZLE

Filed Nov. 13, 1935

Fig. 1.

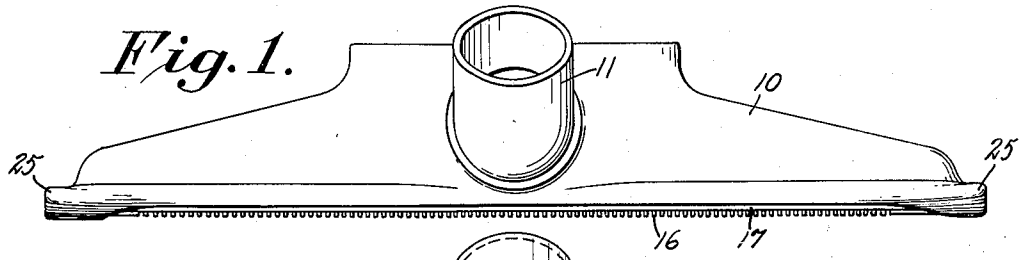


Fig. 2.

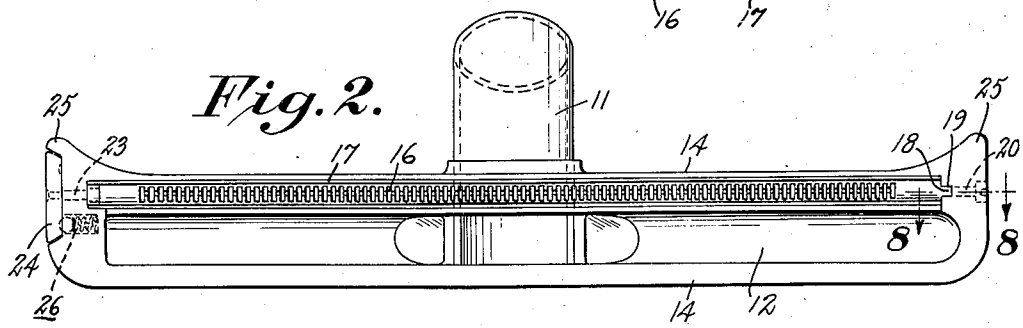


Fig. 3

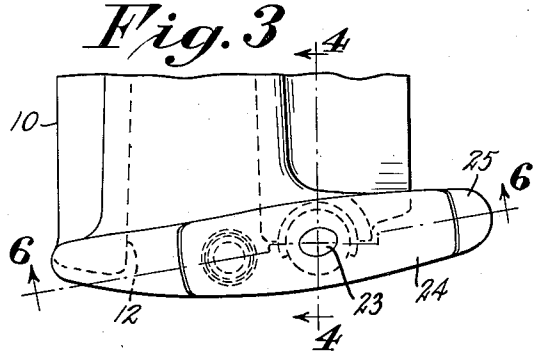


Fig. 4.

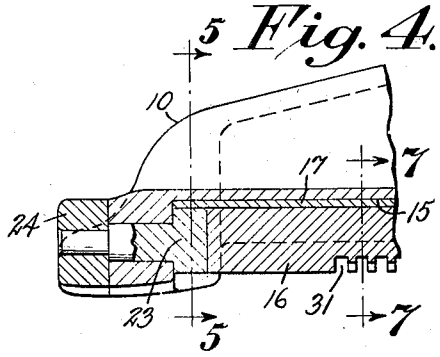


Fig. 5.

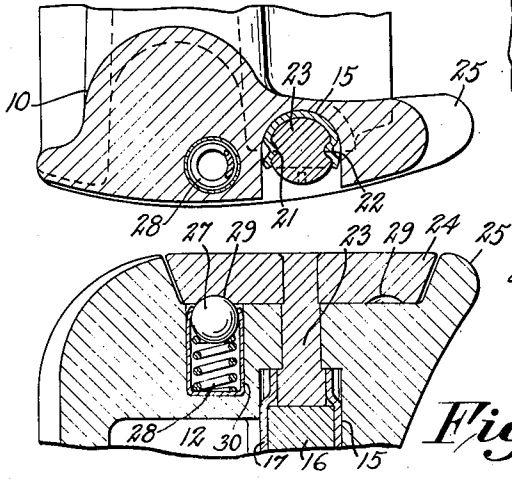


Fig. 6

Fig. 7.

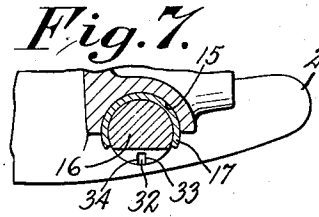
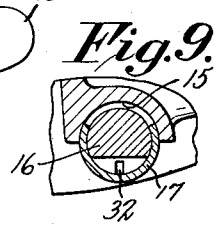


Fig. 9.



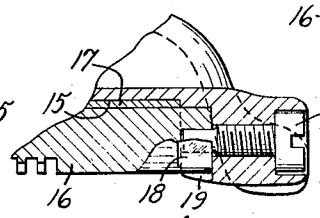


Fig. 8.

INVENTOR.

BY Gustaf Einar Lofgren

Wm. T. Kirkland

HIS ATTORNEY.

Patented Mar. 24, 1936 2,035,240

UNITED STATES PATENT OFFICE

2,035,240

VACUUM CLEANER NOZZLE

Gustaf Einar Lofgren, Riverside, Conn., assignor to Electrolux Corporation, Dover, Del., a corporation of Delaware

Application November 13, 1935, Serial No. 49,472

6 Claims. (Cl. 15—157)

My invention relates to vacuum cleaner nozzles and more particularly to nozzles having relatively movable parts for selectively presenting surfaces of different character to a surface to be cleaned.

The object of my invention is to provide an easily operated structure of this character and one which glides easily on the surface to be cleaned.

The invention will be understood from the following description of a preferred embodiment shown on the accompanying drawing forming part of this specification, and of which:

Fig. 1 is an elevational view of a nozzle embodying the invention;

Fig. 2 is a bottom view of the nozzle of Fig. 1;

Fig. 3 is an end view on larger scale;

Fig. 4 is a vertical sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is a vertical sectional view taken on the line 5—5 of Fig. 4;

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 3;

Fig. 7 is a vertical sectional view taken on the line 7—7 of Fig. 4;

Fig. 8 is a vertical sectional view taken on the line 8—8 of Fig. 2; and

Fig. 9 is a view similar to Fig. 7 with a different relative location of parts.

The nozzle includes a body 10, a rearwardly extending outlet connection 11, adapted to be connected by means of a tube or hose to a vacuum cleaner suction unit, and an elongated mouth 12 defined and surrounded by lip structure 14. The rear longitudinal lip is formed with a semi-cylindrical recess 15. Coaxial with the wall of this recess is a fixed cylindrical rod 16. A sleeve 17 forming part of a cylinder partially surrounds rod 16. The thickness of sleeve 17 is substantially equal to the width of the space between the wall of recess 15 and the outer surface of rod 16.

At one end (right-hand end in Figs. 1 and 2), rod 16 is cut away (see Fig. 8) to provide a flat extension or boss 18 which slips into a correspondingly shaped recess 19 open at the bottom. A set screw 20 extends through the lip structure and has a projection which fits into a recess in extension 18 to hold rod 16 and sleeve 17 in place at this end of the nozzle.

At the other end of the nozzle (left-hand end in Figs. 1 and 2), rod 16 is supported by being held within sleeve 17, and sleeve 17 is supported by slidable engagement of indentations 21 thereof with corresponding recesses 22 in a shaft 23 which is coaxial with rod 16 and sleeve 17 and passes through the lip structure. On the outside end of shaft 23 is an operating member or handle 24 which may be riveted to shaft 23 or the end of shaft 23 may merely be upset to hold the operating member 24 thereon, shaft 23 at this point being of non-circular shape, for example—elliptical as shown in Fig. 3.

In assembly, sleeve 17 is first slipped over rod 16. The shaft 23 is inserted outwardly through the lip structure and handle 24 secured thereto. The projections 21 are then slid into the recesses 22 in the head of shaft 23. The extension 18 having been slipped up into recess 19, the set screw 20 is then screwed in to hold the parts in assembled position.

At the rearward corners of the nozzle and forming part of the lip structure are wings or wing portions 25. These wings have smooth surfaces as appears in Fig. 3 and other figures. I have found that the addition of these wings with their relatively large contact surface provides easy gliding on a rug. The operating member 24 is a section of and conforms in contour to one of the wing portions. The one wing portion thus performs the dual function of giving a bearing surface and forming a frame-work for the operating member 24. A relatively long operating member is provided whereby a considerable leverage is avilable. The operating member 24 can be easily turned by the thumb and finger and is connected through the shaft 23 to turn sleeve 17 about rod 16. Locking means is provided at 26. While various forms of locking means may be used I prefer a ball 27 spring-pressed by a spring 28 to within one of several pockets 29 representing the selective positions of the relatively movable parts 16 and 17. The locking member is preferably a separate assembly consisting of ball 27 and the spring 28 within an individual jacket 30 which has the open end flanged inwardly to prevent the ball from leaving the jacket.

The lower side of rod 16 is formed with transverse grooves 31 intersected by a longitudinal groove 32. This provides adjacent combing edges 33 and 34. For forward movement the combing edges 33 are effective while the lugs or projections forming faces 34 act as guards with respect to the edges 33. On backward movement, the faces 34 are effective while the lugs forming faces 33 constitute guards with respect to the combing faces 34. This is the condition when

rod 16 is exposed to the surface to be cleaned.

By moving the sleeve 17 from the position shown in Fig. 7 to the position shown in Fig. 9, the irregular surface can be covered and the sleeve 17 provides a smooth surface. The irregular surface is generally used only to pick up threads. The sleeve 17 as will be seen, is retractible to within the lip structure so as to uncover the irregular surface. By turning the operating member 24 in either direction, the one or the other surface is exposed to the surface to be cleaned.

What I claim is:

1. A nozzle having lip structure defining a mouth and including relatively movable parts for selectively presenting surfaces of different cleaning characteristics to a surface to be cleaned, and an operating member forming a section of and conforming in contour to the adjacent portion of the lip structure and connected to one of the relatively movable parts.

2. A nozzle as defined in claim 1 in which the parts are relatively rotatable about a given axis and the operating member is rotatable about the same axis.

3. A nozzle as defined in claim 1 in which the relatively movable parts include a rod and a cylindrical part movable about the rod.

4. A nozzle as defined in claim 1 in which the lip structure includes wing portions presenting relatively large surface contact portions and the operating member forms a substantial part of one of the wing portions.

5. A nozzle as defined in claim 1 having an elongated mouth and a rearwardly extending outlet, the relatively movable parts being in a rearward lip portion and extending longitudinally of the mouth, the lip structure having rearwardly extending wings at the ends of said parts, and the operating member constituting a substantial part of one of the wings.

6. A nozzle as defined in claim 1 having a spring-pressed ball for holding the operating member in selective positions.

GUSTAF EINAR LOFGREN.