

July 25, 1950

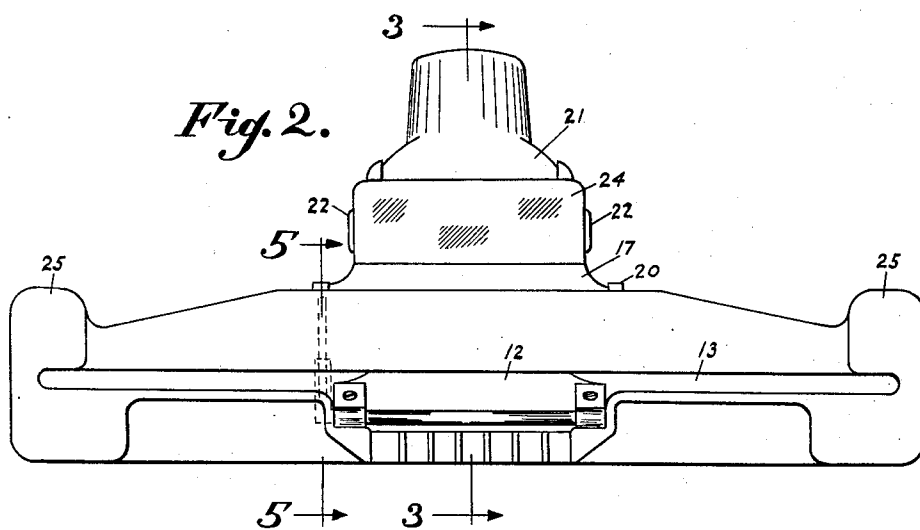
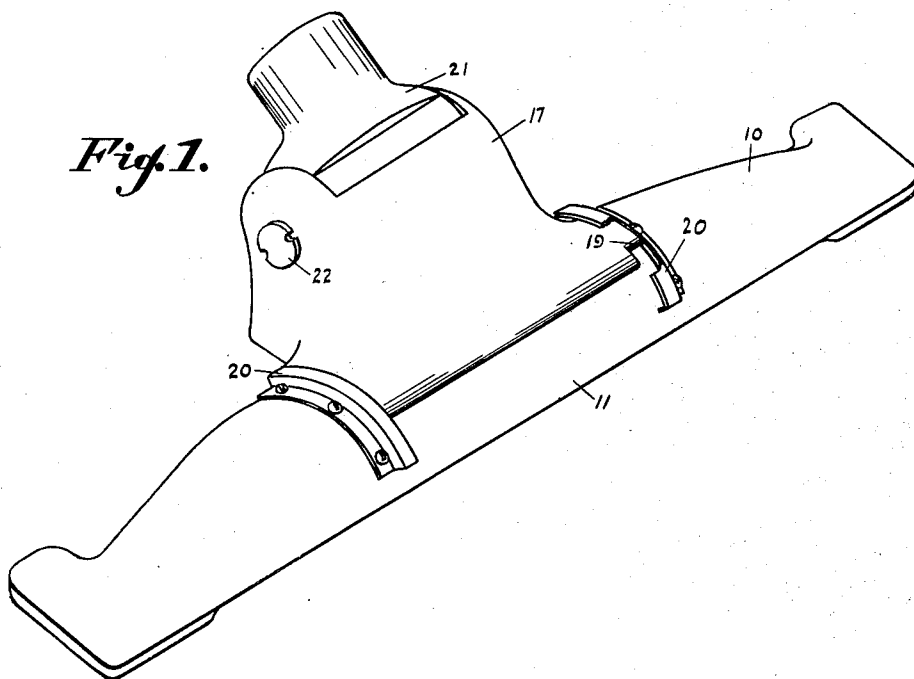
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2,516,205

DUAL-PURPOSE, WAND ACTUATED SUCTION CLEANER TOOL

Filed Feb. 15, 1945

2 Sheets-Sheet 1



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2,516,205

DUAL-PURPOSE, WAND ACTUATED SUCTION CLEANER TOOL

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Fig. 3.

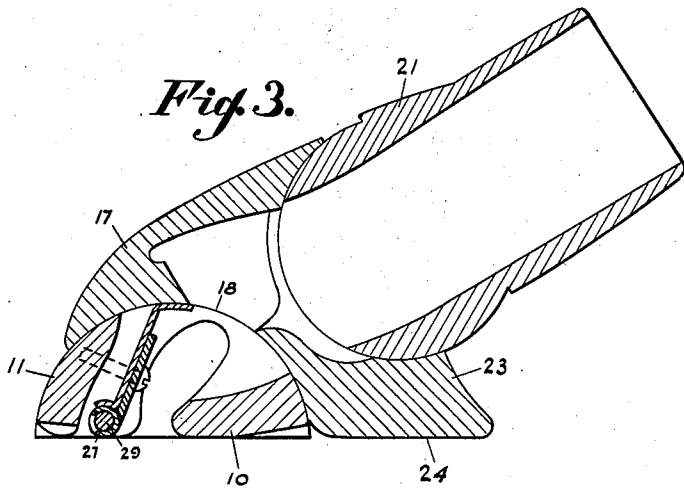


Fig. 4.

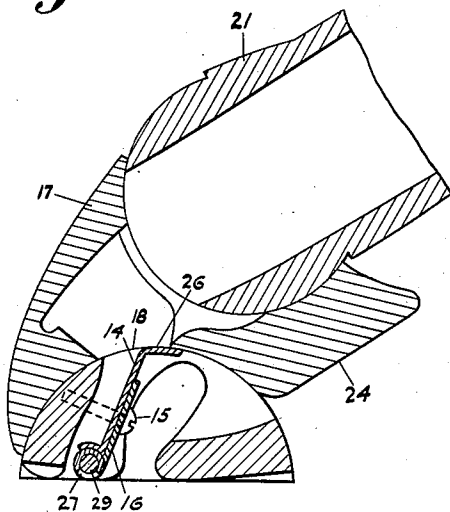


Fig. 5.

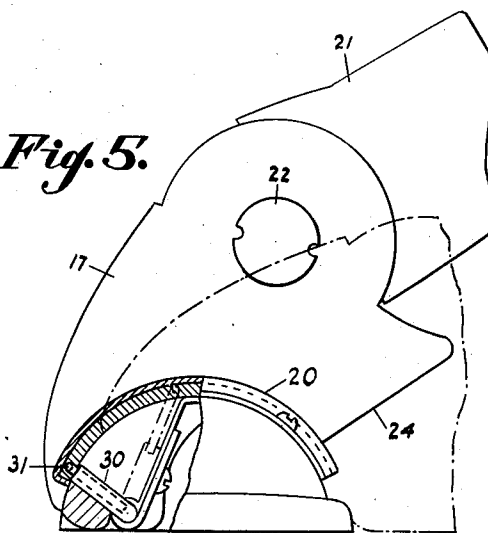
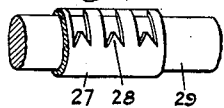


Fig. 6.



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UNITED STATES PATENT OFFICE

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DUAL-PURPOSE, WAND ACTUATED SUCTION
CLEANER TOOL

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2 Claims. (Cl. 15—373)

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This invention relates to nozzles for vacuum cleaners and is particularly concerned with nozzles designed for use on rugs and similar pile fabric. In the normal cleaning of rugs and similar material it is usually adequate to subject the surface to suction applied to a relatively long suction opening. However, quite frequently localized areas of the rug may not properly respond to such suction, and it is therefore frequently desirable to subject such areas to a far more intense form of suction and it is also frequently desirable to subject certain areas to agitation as by the application of a comb or like agitating member during the application of suction so as to dislodge hairs and textile foreign matter which may have become enmeshed with the pile of the rug.

In order to provide a single instrumentality which can be used for subjecting the rug to the normal suction and which may also be used to apply intense suction to the restricted area, suction nozzles have heretofore been suggested in which separate suction apertures are provided on opposite faces of the nozzles and valve means are included by which the suction may be applied selectively to one or the other of such openings. Some devices of this general type have been commercially accepted, however, such devices require a manipulation by the operator to turn the nozzle over so as to present a selected face to the rug surface and in some of such devices manual valve manipulation by the operator is required. Furthermore, the provision of suction openings on opposite sides of the nozzle necessitated intricate and large nozzle structures. It has long been the desire of workers in the vacuum cleaner art to avoid such structural and manipulatory disadvantages while providing a nozzle which could be selectively used to apply a wide swath of suction or a more restricted and more intense suction and to simultaneously apply with the intense suction a comb or like agitating device for detaching enmeshed foreign matter.

In general terms, it is among the objects of the present invention to provide a nozzle which overcomes the above outlined objections.

More specifically it is among the objects of the present invention to provide a nozzle having a single body opening to which suction may be selectively applied either to a large area of the opening or to a restricted portion thereof.

Another object of the present invention is to provide a suction nozzle having a single suction opening to a restricted portion of which is ap-

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plied an agitator which may be moved into or out of operative position.

A further important object of the invention is to provide a suction cleaner which may apply suction to a wide area of the rug or which may apply more intense suction to a restricted area, the election of which may be made without manual manipulation of the nozzle by the operator.

A still further object of the invention is to provide such a nozzle in which the election is made by a simple movement of the nozzle handle whereby its relation to the nozzle body is changed in order to effect such election.

Another object of the invention is to provide a suction nozzle of the type set forth in which the selection of the type of suction applied may be made without removal of the nozzle from the surface being cleaned.

Numerous other objects and features will be apparent from a consideration of the following specification taken in connection with the accompanying drawings in which:

Fig. 1 is a perspective view of a preferred embodiment of the present invention;

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

Fig. 3 is a sectional view taken on lines 3—3 of Fig. 2 showing the assembly arranged for the application of suction to the entire length of the nozzle opening.

Fig. 4 is a view similar to Fig. 3 with the parts arranged for the application of intense suction to a restricted area;

Fig. 5 is a sectional view taken on lines 5—5 of Fig. 2, and

Fig. 6 is a fragmentary detail view of the agitator of the present invention.

In general terms, the invention may be defined as comprising a nozzle body having a single elongated suction opening, a central portion of which is divided by a baffle in combination with a suction applying head which is bodily movable on the body of the nozzle in such a manner that the suction applying opening thereof may be selectively positioned to apply suction to the entire length of the opening or to that portion thereof defined by the baffle. The invention also contemplates the use of an agitator which is movable into and out of operative relation by the bodily movement of the head with respect to the nozzle body.

Referring more particularly to the drawings the nozzle is shown as comprising a body 10 having a central arcuate upper surface 11 and a single elongated suction opening including a central

wide section 12 and narrower extending side sections 13. Mounted within the wide section 12 is a fixed baffle 14 secured in spaced relation from the front edge of the section 12 of the opening by securing screws 15 and brackets 16.

Mounted upon the arcuate surface 11 of the body 10 is a suction head 17 which is substantially hollow having a restricted suction applying aperture 18 in the face thereof. The head 17 is movably secured to the body 10 by the engagement of side flanges 19 within arcuately shaped channel forming members 20. The arrangement is such that when a lifting moment of force is applied to the head it will slide forwardly on the surface 11 from the position shown in Fig. 3 to the position shown in Fig. 4. However, normal force applied to the head for simple forward and reverse movement of the nozzle on the rug will not induce such movement of the head within the channel forming members.

Suction is applied to the head from a conventional hollow operating wand or handle through a pivoted hollow connector 21 which is pivotally secured in the head 17 by suitable screws 22. The head 17 is preferably provided with an enlarged rearwardly extending portion 23 which has a rug contacting gliding surface 24 which in cooperation with elongated gliding surface 25 at the end of the nozzle provides for a smooth movement with the nozzle over the rug surface when suction is applied by the elongated portion of the opening.

The baffle 14 is provided at its upper end with a rearwardly inclined and arcuately shaped surface 26 which acts in conjunction with the arcuate surface 11 of the head to guide the movement of the head with respect to the body and which also acts to insure application of intense suction to the restricted area of the opening in front of the baffle when the head is moved forwardly on the body as shown in Fig. 4.

The brackets 16 terminate at their lower ends in an eyelet which receives the ends of a central supporting rod 29 upon which is mounted an agitator here shown in the form of a rotatable comb member 27 provided with teeth 28. At one end the member 27 is provided with a right angular disposed operating arm 30 within which is telescopically mounted a secondary arm 31 and which is normally pressed outwardly by an internal spring not shown. The extremity of the secondary arm 31 engages the head 17 thus providing for rotary movement of the sleeve 27 on the rod 29 upon bodily movement of the head 17 with respect to the body 10. As will be noted in Fig. 3 when the head is in the rearward position with respect to the body and the suction is applied to the elongated portion of the opening, the sleeve is so positioned that the teeth 28 thereof will roll upwardly presenting to the rug a smooth surface. When the head is moved forwardly on the body, however, the sleeve 27 is rotated in a counter-clockwise manner to the position shown in Fig. 4 wherein the teeth will be presented to the rug surface so as to engage hairs and fine textile material to loosen the same from the nap of the rug.

In the operation of the device the normal position for general rug cleaning is as shown in Fig. 3, the connector 21 is free to pivot within the head. The surface 24 together with the surface 25 balances the nozzle for easy movement forward and backward over the rug surface. The application of force through the connector 21 for such movement will not disturb the relation of the head

with respect to the body. However, upon the application of a bodily upward movement to the connector 21, as distinguished from pivotal movement, the head 17 will slide forwardly on the body 10 to the position shown in Fig. 4 and in so moving the agitator will be brought into operative position and the suction will be applied forwardly to the baffle 14 and the intense suction to the restricted area in front of the baffle will be applied to the rug and at the same time the agitator will be presented to that portion of the rug which is being subjected to the intense suction.

Obviously, numerous changes and modifications and the full use of equivalents may be resorted to in the practice of the present invention without departure from the spirit or scope thereof as outlined in the appended claims.

What I claim is:

1. In a suction nozzle for vacuum cleaners, the combination with a body having a suction opening therein, of a partition dividing said opening, means applicable to selectively apply suction to either side of said partition, said means comprising a suction head bodily movable upon said body, an agitator carried by said partition, and means operatively connecting said agitator to said suction head for moving said agitator to an operative or inoperative position in response to movements of said head.

2. In a nozzle for suction cleaners, a body having a narrow suction opening extending the length of the body and including an enlarged central portion, a partition in said body for dividing the opening into one section extending the entire length of the body and a second section extending the length of the enlarged central portion of the opening, a rotatable comb supported by said partition for movement to an operative or inoperative position and a suction head movably mounted on said body to selectively apply suction to either one or the other of the sections, and means operable to rotate the comb to operative position by and with movement of said head to a position for directing suction to the shorter section.

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