

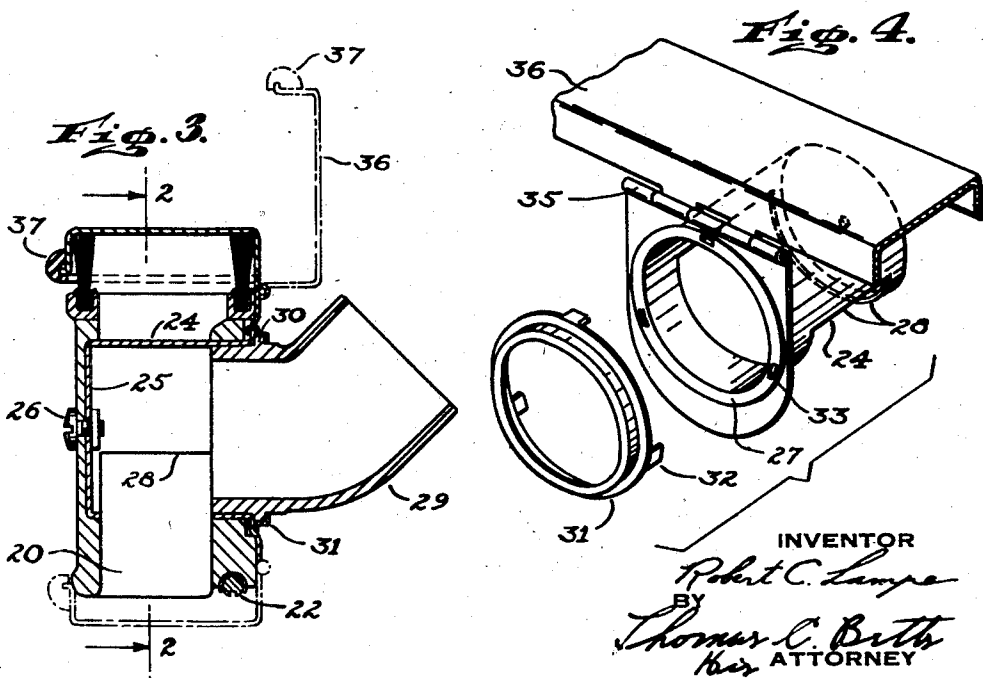
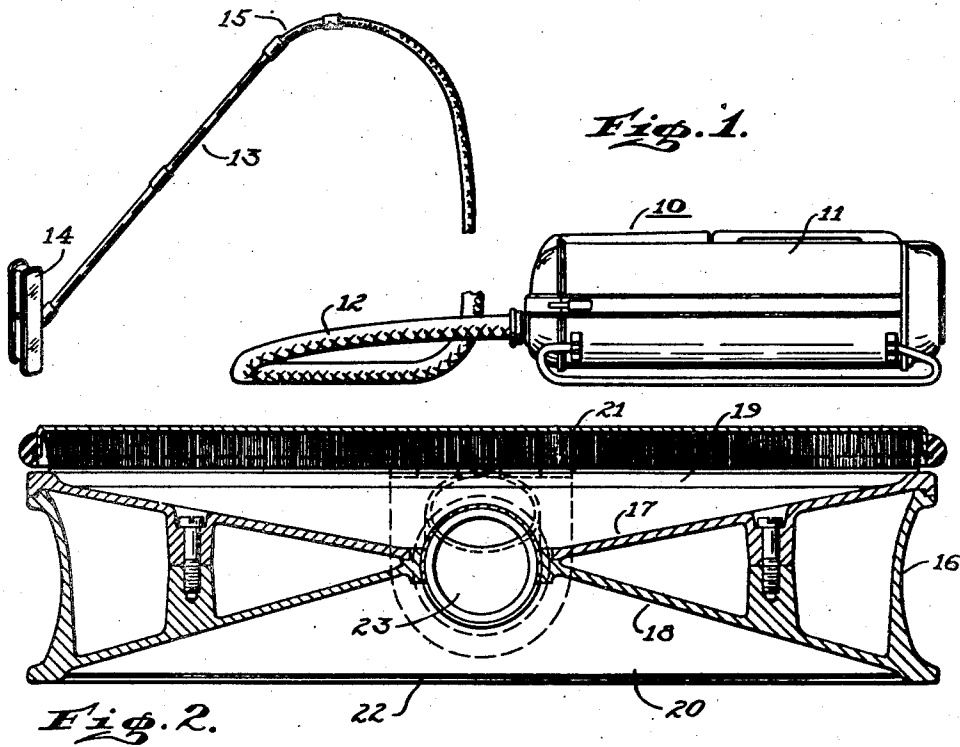
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DUPLEX SUCTION NOZZLE WITH COVER ACTUATED VALVE

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DUPLEX SUCTION NOZZLE WITH COVER
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1 Claim. Cl. 15—157)

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This invention relates to combination or duplex floor cleaning tools to be used in connection with vacuum cleaners and particularly to such tools wherein oppositely disposed suction faces are provided for selective use as for instance on different types of surfaces.

It is among the objects of this invention to provide a nozzle which will insure full delivery of suction to the desired opening and will prevent the admission of suction to the opening not in use regardless of the angular disposition of the suction tube or its connected wand.

A further and equally important object of the invention is to provide a nozzle cover means which is selectively applicable to the suction opening not in use.

A still further object of the invention is to provide a combination cover means and a suction directing means by which manipulation of the cover to the desired position will actuate said directing means to a position to insure the desired suction application.

Numerous other objects and features of the present invention will be apparent from a consideration of the following specification taken in conjunction with the accompanying drawing in which:

Fig. 1 is a side elevation of one embodiment of my present invention as applied to a vacuum cleaner;

Fig. 2 is a sectional view taken on a vertical plane along line 2—2 of Fig. 3;

Fig. 3 is a sectional view taken on a transverse vertical plane through the center of the tool, and

Fig. 4 is an exploded view of the cover and suction controlling sleeve of the present invention.

Referring now to the drawings, reference character 10 generally designates a vacuum cleaner of the tank type comprising a body 11 housing a dust bag, a filter pad and a motor-fan unit. To one end of the body is connected a hose 12 to the opposite end of which there is connected a hollow handle or wand 13 made up of several sections telescoped together. A duplex tool 14 embodying the present invention is connected to the last section of the wand, it being understood, of course, that the form of vacuum cleaner, its hose and handle, here shown are merely presented by way of illustration, the invention being equally applicable to various other types of suction devices.

When using the cleaner a person starts up the motor-fan unit of the cleaner to create a flow of air in through a selected suction opening in

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the tool 14 along the wand and hose, and through the dust bag and filter pad to an exhaust. The user can then push the tool over the surface to be cleaned while holding on to the elbow 15 between the wand and hose. Since it is desirable to have different types of tools for cleaning different surfaces, as for instance bare floors and rugs, considerable time and trouble can be saved by the use of a tool of the type herein shown in which the two tools are combined in one. In order to change over from one nozzle opening to the other it is merely necessary to turn the tool over.

Referring now to Figs. 2 and 3, the duplex tool comprises a hollow body 16 divided by inner walls 17 and 18 into upper and lower chambers, said chambers leading to suction openings 19 and 20, respectively. The suction opening 19 is designed for cleaning bare floors and walls, and to facilitate the removal of dirt, it is provided around its edges with bristles 21. The opposite opening 20 is designed for rug cleaning and may be provided along one edge with a comb or surface agitating member 22 to aid in the removal of tenaciously adhering surface litter. It will be understood, of course, that the invention is in no way limited to the specific type of suction opening here referred to. It will be obvious that the invention is equally applicable to a wide variety of nozzles having varying characteristics of suction openings.

The rear side wall of the body of the nozzle 14 is provided with a central opening 23 through which is mounted a suction directing sleeve 24, the body portion of which is generally cup shaped. The closed forward end 25 of the sleeve 24 is secured to the inner face of the front wall of the nozzle by nut and bolt connection, as shown at 26. The connection 26 is such as to permit rotary movement of the nozzle with respect to the sleeve 24. The opposite end of the sleeve 24 is provided with outwardly directed flange 27 which is adapted to seat within a counterbore surrounding the opening 23. Intermediate the closed end 25 and the flange 27, sleeve 24 is provided with a suction opening 28 which extends around the member 24 for approximately 180°.

The sleeve 24 receives within the open end thereof, the terminal end of a suction tube in the form of an elbow 29. A circumferential bead 30 carried by the elbow 29 bears against the flange 27 and is secured in swiveled relation thereto by a securing ring 31. Projections 32 of the ring 31 are receivable through apertures 33 of flange 27, such projections being bent over

after extension through the openings of the flange so as to secure the elbow in the relation shown.

Flange 27 of the sleeve 24 is extended outwardly beyond the apertured portion thereof to provide, along one edge, which is disposed diametrically opposite the opening 28, a hinge portion 35 to which is hingedly secured a cover member 36. The dimensions of the hinged cover 36 are such as to accommodate and enclose either of the openings 19 or 20. The peripheral edges of the cover are provided with an annular bumper 37 which being always uppermost when the nozzle is in use protects walls and furniture from direct contact with the metallic nozzle body.

By the construction above outlined, it will be noted that the sleeve 24 together with the cover 36 is rotatably mounted with respect to the body of the nozzle 14 so that the body may be freely rotated thereon and thus with respect thereto. It will be further noted that the elbow 29 is rotatable within the sleeve 24 so that both the sleeve 24 and the nozzle 14 can be freely and independently rotated with respect to the elbow and with respect to each other.

In the operation of the device when it is desired to clean rugs, the parts assume the full line position shown in Fig. 3. The opening 28 of the sleeve 24 is in communication with the suction opening 20 of the nozzle. The nozzle may thus be moved freely along the rug and the wand may be tilted thus swiveling the elbow 29 within sleeve 24 without diminishing the suction applied through the opening 20 or without opening a suction passage to the opening 19. In this position, opening 19 is covered by the cover 36 and the bumper 37 is in its desirable position, at the top of the nozzle body.

When it is desired to use the opposite suction opening 19, the cover 36 is raised to the dotted line position shown in Fig. 3, and the nozzle body is rotated upon the sleeve 24, the sleeve and elbow remaining relatively fixed. With the nozzle thus reversed the opening 20 will be in registration with the cover 36 which may then be moved to a closed position whereby its relation to the opening is as shown by the dotted lines at the lower portion of Fig. 3. The opening 19, however, has now been disposed lowermost in the place of the position of the opening 20 shown in Fig. 3. In this new position, it will be seen that the opening 28 of the sleeve 24 is now in communication with opening 19 while the opening 20 is in uppermost position and is cut off from suction by the upper closed portion of the sleeve 24.

It will be noted that in both positions of the nozzle, while suction is selectively admitted to the selected lowermost suction opening, the pivotal movement of the elbow 29 with respect to the nozzle 14 will not affect the position of the sleeve 24 with respect to the elbow 29 and will thus neither restrict the suction applied to the suction opening in use nor admit suction through the opening not in use.

It is to be noted that since the bumper 37 is attached to the peripheral edge of the cover it is always near the top of the tool regardless of which opening is being used. Thus at all times the bumper is guarding the nozzle from contact with, and accidental scratching or marring of, furniture or other objects when the tool is in use.

While only one preferred embodiment of the invention has been here illustrated and described it is to be considered as illustrative only, and it is understood that numerous changes, modifications and the full use of equivalents may be resorted to without departure from the spirit or scope of the invention as outlined in the appended claim.

What I claim is:

In a suction cleaning tool, a hollow body having a pair of oppositely disposed suction openings in the faces thereof, a valve sleeve of cylindrical configuration mounted within said body and rotatable with respect thereto, said sleeve having an opening in one side thereof for selective communication with a selected one of said suction openings, a suction tube rotatably mounted with respect to said sleeve and said body, the arrangement being such that the body, sleeve and tube may each have relative rotary movement with reference to each other, and a cover pivotally mounted on said sleeve about an axis lying in a plane normal to the axis of rotation of the sleeve and adapted to fit either of said openings, said cover being disposed on the side of said sleeve opposite to the suction opening thereof.

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