

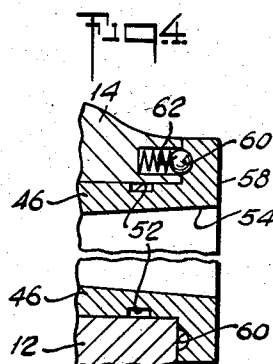
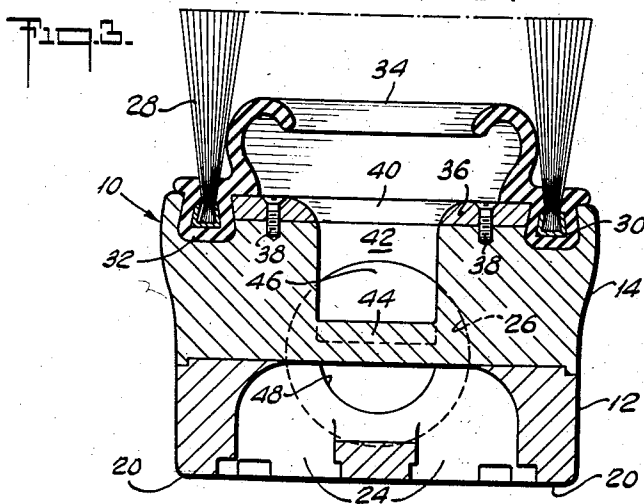
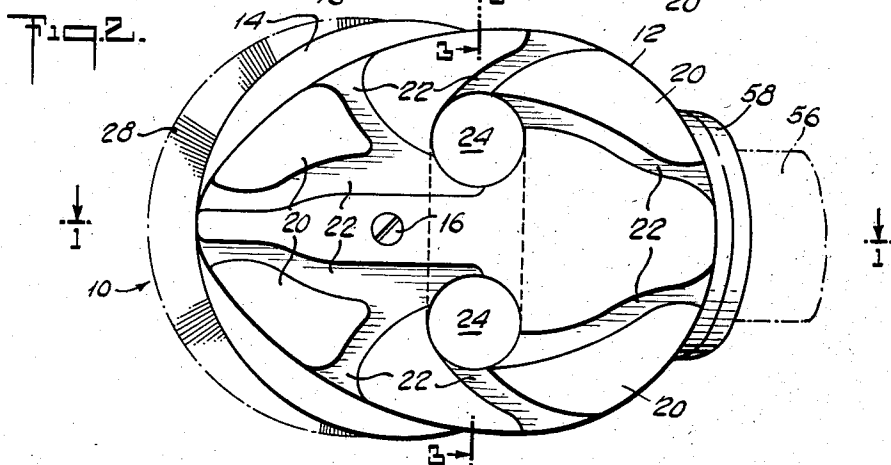
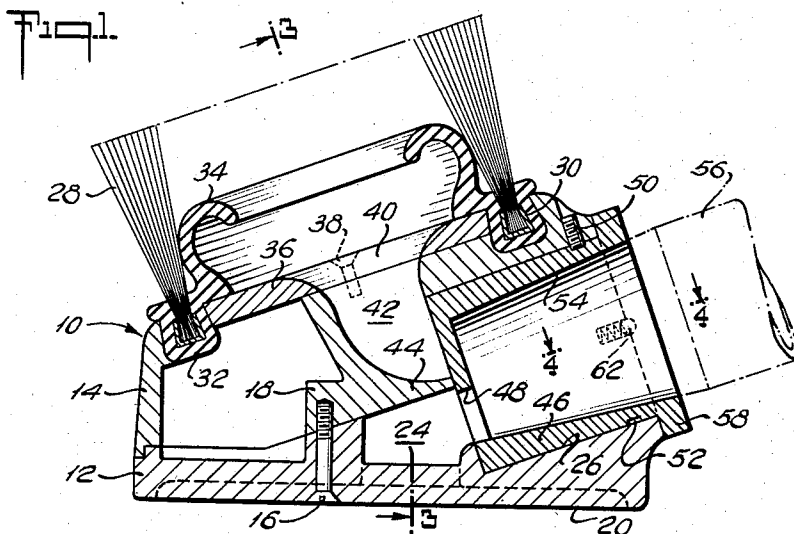
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DOUBLE PURPOSE SUCTION CLEANING NOZZLE

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DOUBLE PURPOSE SUCTION CLEANING NOZZLE

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1 Claim. (Cl. 15—417)

My invention relates to cleaning tools for use in connection with a vacuum cleaner and more especially to double purpose tools, that is tools which are provided with two different types of surface contacting structures which are usable selectively by the operator for cleaning different kinds of surfaces.

More especially my invention relates to the combination of a dusting brush with an upholstery nozzle. A dusting brush of this type is useful for cleaning hard surfaces, such as tables and the wooden portions of chairs and sofas, while an upholstery nozzle is useful in cleaning soft surfaces, such as the upholstered portions of furniture.

While it has been long known to provide a duplex tool of this nature with a swivel mounting on a suction conduit so that the tool may be turned through 180° in order to change from one kind of nozzle to the other, a serious disadvantage of such an arrangement is that it has been necessary to make the overall height of the tool somewhat greater than the necessary diameter of the suction conduit. Inasmuch as the latter is limited by the desired air flow, this has imposed a limitation on the minimum height of the tool.

In accordance with the present invention I make the body of the tool wedge-shaped with only the rear portion of sufficient thickness to receive the suction conduit. From the rear portion the opposite faces of the tool converge towards each other and hence the front or nose portion is substantially thinner, thus enabling at least this nose portion of the tool to be inserted into narrower spaces than would otherwise be the case.

Further objects and advantages of my invention will be apparent from the following description when taken in connection with the accompanying drawings which form a part of this specification and in which;

Fig. 1 is a cross-sectional view of a preferred embodiment of my invention and is taken on the line 1—1 of Fig. 2;

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

Fig. 3 is a cross-sectional view taken on the lines 3—3 of Figs. 1 and 2; and

Fig. 4 is a cross-sectional view on an enlarged scale taken on the line 4—4 of Fig. 1.

Referring to the drawings, reference character 10 designates generally an improved dual purpose nozzle in accordance with my present invention. This nozzle includes parts 12 and 14 which are suitably secured together as by means of the bolt 16 which extends through the part 12 and engages a threaded hole in a boss 18 of the part 14.

The outer face of the part 12 constitutes an upholstery nozzle having surface contacting structure 20, which includes a plurality of grooves 22 leading to channels 24 extending into the part 12. Preferably, the inner ends of the grooves 22 are tangential to the outer ends of the channels 24 so as to provide for spiral flow of the air as it passes from the grooves into the channels. As is shown particularly in Fig. 3 the inner ends of the two channels 24 are joined together and communicate with

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the inner end of a cylindrical passageway 26 which is formed between the two parts 12 and 14.

The other face of the tool 10 is formed as a dusting brush. This includes a circular row of bristles 28 which are secured in a circular metal channel 30 which in turn is received in a channel portion 32 of a rubber member, which also includes a circular bell portion 34 disposed within the ring of bristles. Channel portion 32 is seated in a recess in part 14 and a rigid circular plate 36 is forced within the inner circumference of the channel portion 32 and is secured to the part 14 by means of bolts 38. Plate 36 is formed with a central aperture 40 which communicates with the outer end of a channel 42 formed in part 14. The inner end of this channel communicates with passageway 26 and the part 14 is formed with a partition 44 which separates channels 24 from channel 42.

It will be noted that the opposite faces of the tool 10 are inclined with respect to each other and converge towards each other at the front end of the tool. Thus, the cylindrical passageway 26 is formed in the rear and thicker end of the tool and it will be noted that the diameter of this passageway is greater than the width of the parts 12 and 14 at the front end of the tool.

Rotatably mounted in the passageway 26 is a cup-shaped valve member 46 which is formed with a port 48 in the otherwise closed inner end thereof. This valve member is rotatably secured within the passageway in any suitable manner, as for example, by the set screw 50 which engages an annular groove 52 formed in the outer surface of the valve member. The inner bore 54 of the valve member is tapered in order to receive the tapered end of a suction conduit 56.

As shown in Fig. 1 and more particularly in Fig. 4, the outer end of the valve member is provided with a flange 58 formed with diametrically spaced recesses 60. A spring pressed detent 62 is carried by part 14 and is adapted to engage either of these recesses.

In the position of the parts shown in Fig. 1, the rotatable valve member 46 is so positioned that the port 48 communicates with the channels 24 leading to the upholstery nozzle and the detent 62 engages one of the recesses. Consequently, suction is applied from the conduit 56 to the upholstery nozzle. If the tool is rotated 180° about the valve member 46, the port 48 will be brought into communication with the channel 42 and the detent will engage the other recess and suction will be applied to the round brush. The valve member may be readily held stationary while the tool is rotated around it by its engagement with the tapered end of the suction conduit 56. Also, if desired, the outer surface of the flange 58 of the valve member may be grasped by the hand.

It will thus be seen that the height or thickness of the tool at its front end is less than would be the case if the two faces of the tool were parallel to each other, inasmuch as the height of all parts of the tool in the latter case, in order to accommodate the suction conduit, would have to be substantially the same as the maximum height at the rear end of the present tool.

While I have shown one more or less specific form of my invention it is to be understood that this has been done for the purpose of illustration only and that the scope of my invention is not to be limited thereby, but is to be determined from the appended claim.

What I claim is:

In a vacuum cleaner tool a wedge shaped nozzle having a rear portion thicker than the front portion and having opposed work faces with dissimilar surface contacting structures thereon converging towards said front portion, said wedge shaped nozzle member having an elongated passageway circular in cross-section extending inwardly a substantial distance from said thicker rear portion and

between said converging work faces, said nozzle member having oppositely disposed channels providing communication between said work faces and the inner portion of said passageway, a valve member located in said passageway and having an exterior complementary to said passageway, said valve member having a portion extending transversely of said passageway across said channel and with an opening for providing selective communication with said channels, means whereby said valve member is rotatably secured in said passageway, and means for providing a connection between a hose and said tool whereby said tool may be rotated relative to said hose, said tool having a plurality of outwardly extending grooves in one of its work faces communicating at their inner ends with the respective channel leading to such work face.

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