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SUCTION CLEANER NOZZLE

Filed Aug. 3, 1927

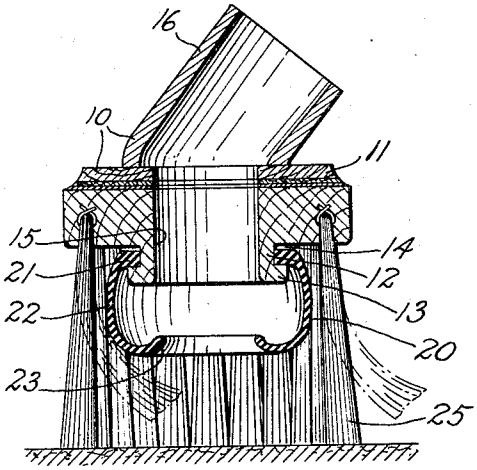

Fig. 2.

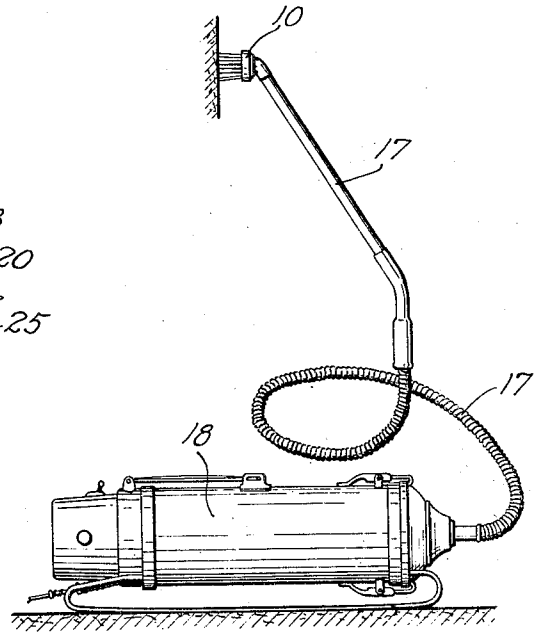

Fig. 1.

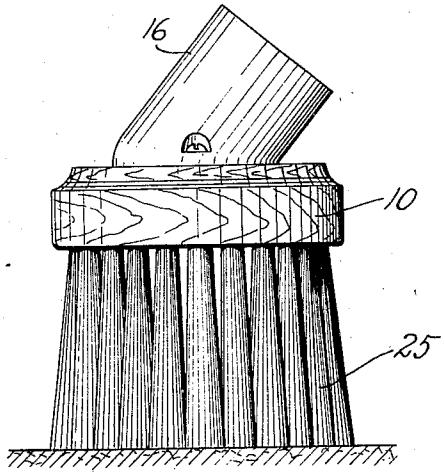

Fig. 3.

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UNITED STATES PATENT OFFICE

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SUCTION CLEANER NOZZLE

Application filed August 3, 1927, Serial No. 210,311, and in Germany August 7, 1926.

Our invention relates to vacuum cleaner nozzles and more particularly to nozzles comprising bristles which are relatively soft.

Amongst the objects of the invention are: to provide a nozzle comprising bristles which permits bending of the bristles without breaking the bristles; to provide a nozzle comprising bristles including a resilient and replaceable member for preventing injury to bristles; to provide a nozzle with soft bristles which does not retain threads, dust and the like; to provide a nozzle which will not injure furniture; and to provide a nozzle having a variable suction opening.

The invention will be understood from the following description taken in conjunction with the accompanying drawings showing a preferred form of nozzle embodying the invention.

In the drawings:

Fig. 1 shows a vacuum cleaner equipped with a nozzle in accordance with the invention;

Fig. 2 is a cross-sectional view of a preferred form of the improved nozzle; and

Fig. 3 is a side view of the nozzle shown in Fig. 2.

The nozzle indicated generally by reference character 10 comprises a rigid body member 11 having an extension 12 including an outwardly extending rim 13 forming an annular recess 14. Extending through body member 11 is a passage 15 for flow of air, which passage passes through the extension 12. The body member also comprises a connection piece 16 adapted to be connected to the end of a tubular member 17, in turn connected to a vacuum cleaner casing 18 comprising means for producing a flow of air.

A hollow bell-shaped member 20 has an inturned edge 21 extendible to pass over rim 13 and to fit into recess 14. Hollow member 20 has a rounded middle portion 22 and an outer edge 23, which is inturned and further curved inwardly (upwardly, as shown) within member 20. Member 20 is made of resilient material such as rubber or the like. This serves: to permit the extension of edge 21 to fit over rim 13; to provide a resilient cushion for bristles 25 which are secured in body member 11 and which extend outwardly around and beyond hollow member 20; to prevent injury to furniture; and to provide a variable suction opening.

Bristles 25 are relatively soft and are designed to bend in operation of the nozzle. The rounded surface of hollow member 20 prevents undue bending of bristles 25 and thereby protects the bristles from injury. Due to the construction and arrangement of the parts, the bristles lie along the curved surface of member 20 and follow the line of flow of the suction air. Consequently, small threads, dirt and the like cannot remain therein.

It will be seen that the inturned free flexible edge 23 provides a suction opening of generally circular form, which opening is adapted to be reduced by bending the resilient hollow member 20.

Since rubber and other similar resilient materials deteriorate, hollow member 20 is made replaceable in the manner shown and above described.

While we have illustrated and described a specific form of the invention, it will be understood that the invention is not limited to the structure given by way of example, but is to be gauged by the terms of the appended claims taken in conjunction with the state of the prior art.

What we claim is:

1. A vacuum cleaner nozzle comprising a body member having a passage for air through the same, a hollow member, means for removably securing said hollow member to said body member so that air may pass through said hollow member and through said passage, said hollow member being made of resilient material and having a free flexible edge turned inwardly and toward the body member and bristles mounted in said body member extending outwardly around and beyond said hollow member.

2. A vacuum cleaner nozzle comprising a body member having a passage for air through the same, a hollow member, means for removably securing said hollow member to said body member so that air may pass through said hollow member and through

said passage, said hollow member being made of resilient material and having a rounded bulged middle portion and an inturned free flexible edge providing a suction opening adapted to be reduced by flexure of the resilient member, and bristles mounted in said body member extending outwardly around and beyond said hollow member.

3. A vacuum cleaner nozzle comprising a rigid body member, a resilient hollow member connected to the body member and bristles mounted in said body member extending outwardly around and beyond said hollow member, said hollow member forming a passage for air and being of rounded bulged contour and having an outer free flexible edge turned inwardly and curved into the air passage so as to extend upwardly when the bristles are in substantially vertical position with the loose ends of the bristles downward to provide a smooth contact surface for the bristles and said flexible edge providing a suction opening adapted to be reduced by flexure of said hollow member.

4. A vacuum cleaner nozzle comprising a rigid body member, a resilient hollow member connected to the body member and bristles mounted in said body member extending outwardly around and beyond said hollow member, said hollow portion forming a passage for air and being of rounded bulged contour and having an outer free flexible edge turned inwardly and curved into the air passage so as to extend upwardly when the bristles are in substantially vertical position with the loose ends of the bristles downward to provide a smooth contact surface for the bristles and said hollow member being made of rubber and said flexible edge providing a suction opening adapted to be reduced by flexure of said hollow member.

5. A vacuum cleaner nozzle comprising a rigid body member having a centrally disposed opening, a resilient hollow member connected to the body member in alignment with said central opening, and bristles mounted in said rigid body member extending outwardly around said resilient hollow member, said resilient hollow member being of rounded bulged contour and having an inturned free flexible edge providing a suction opening adapted to be reduced by flexure of the resilient member.

6. A vacuum cleaner nozzle comprising a rigid annular body member having a relatively large central opening, a single resilient hollow member having a large central passage connected to the body member in alignment with said central opening, and bristles mounted in said rigid body member extending outwardly around and beyond said resilient hollow member, said resilient hollow member being made of rubber and being of rounded bulged contour and having an inturned free flexible edge providing a circular suction opening adapted to be reduced by flexure of the resilient member.

7. A vacuum cleaner nozzle comprising a body member having a main portion and an extension including an outwardly extending rim providing an annular recess between the rim and the main portion of the body member and a passage through said extension for flow of air, a tubular member having inturned end edges, said tubular member being made of resilient material, one edge being extensible to pass over said rim and fit into said recess and bristles mounted in said body member extending outwardly around and beyond said tubular member.

8. A vacuum cleaner nozzle comprising a body member having a main portion and an extension including an outwardly extending rim providing an annular recess between the rim and the main portion of the body member and a passage through said extension for flow of air, a tubular member having inturned end edges, said tubular member being made of resilient material, one edge being extensible to pass over said rim and fit into said recess and bristles mounted in said body member extending outwardly around and beyond said tubular member, and the other inturned edge of said tubular member being curved inwardly within the tubular member.

In testimony whereof we hereunto affix our signatures.

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LARS ELL.