

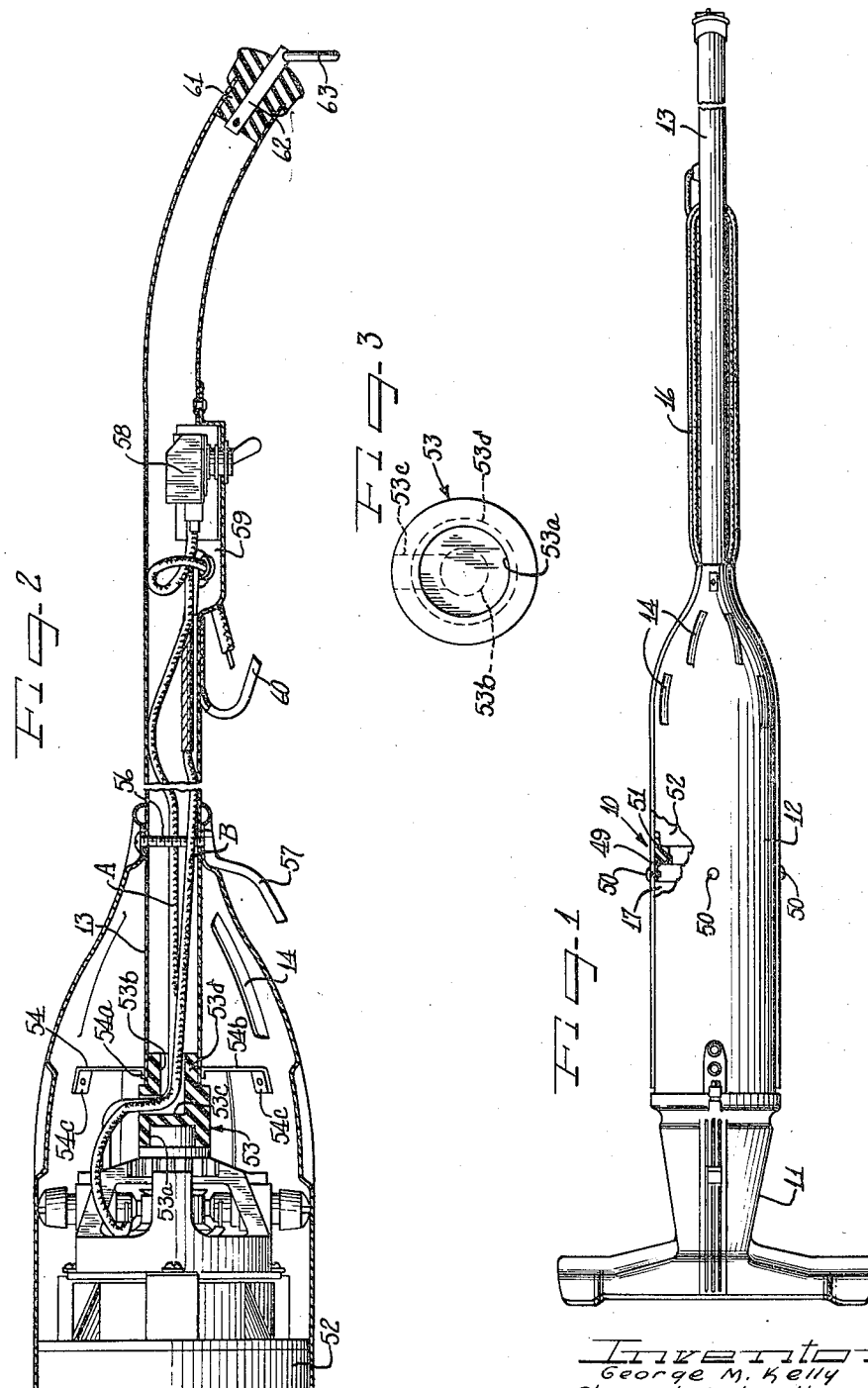
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MOTOR MOUNTING FOR VACUUM CLEANERS

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MOTOR MOUNTING FOR VACUUM CLEANERS

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Original application September 10, 1948, Serial No. 48,576, now Patent No. 2,626,418, dated January 27, 1953. Divided and this application June 3, 1952, Serial No. 291,466

5 Claims. (Cl. 15—344)

The present application is a division of our copending application Serial No. 48,576 filed September 10, 1948, now Patent 2,626,418.

This invention relates to vacuum cleaners, and more particularly, to an improved construction which permits the manufacture of a rigid "broom-type" vacuum cleaner which is greatly improved with respect to appearance and operation and which affords substantial reductions in cost over constructions heretofore known to the art.

It is an object of this invention to provide an improved mounting for a motor suction unit of a rigid broom-type vacuum cleaner which will permit such motor suction unit to be completely cushioned in an elastic bushing mounting and supported for both radial and axial vibrations independently of the main casing of the vacuum cleaner. Such a construction not only prolongs the effective life of the moving parts, but improves the operating characteristics of the vacuum cleaner by minimizing noise and vibration.

The specific nature of the invention, as well as other objects and advantages thereof, will become apparent to those skilled in the art from the following detailed description of the annexed drawings which, by way of preferred example only, illustrate one specific embodiment of the invention.

On the drawings:

Figure 1 is an elevation view of a rigid broom-type vacuum cleaner embodying the features of our invention;

Figure 2 is a cross-sectional view showing the structural details of the improved motor mounting arrangement according to the present invention;

Figure 3 is an end view of the bushing mounting provided in accordance with the principles of the present invention.

As shown on the drawings:

Referring to Figure 1, a rigid broom-type vacuum cleaner is indicated at 10 comprising a nozzle casing 11, a body casing 12, and an operator's handle 13. The cleaner is equipped with an electrically powered motor suction unit housed in one end of the body casing 12 and operates in a conventional manner well known in the art to induce an upward draft of dust-laden air through nozzle casing 11 into body casing 12 where the air is filtered in accordance with a procedure more particularly described in our copending application Serial No. 48,576 filed September 10, 1948, whereupon the air is discharged outwardly of the body casing 12 through a plurality of discharge slots 14. Electrical energy is conveyed to the cleaner 10 from a conventional electric outlet by means of a conductor 16 which may be appropriately coiled as shown in Figure 1 when the cleaner 10 is not in use.

The dirt collection chamber of the cleaner is indicated at 17 and is terminated by a flange retainer plate 49 secured to the body casing 12 by a plurality of screws 50. The flanges of the retainer plate 49 center and support an annular resilient cushion ring 51 which de-

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finer a counterbore for receiving and supporting a motor suction unit 52.

Situated on the upper end of the motor suction unit 52 is a bushing mounting 53 preferably comprising a molded rubber or similar elastic resilient material and defining a counterbore 53a for receiving the motor suction unit 52 in aligned center support. On its opposite end, the mounting 53 defines a counterbore 53b of a smaller inside diameter than counterbore 53a which terminates in a transverse passage 53c thus forming an integral passageway for introducing a pair of electrical leads A and B into the interior of the tubular operator's handle 13. A reduced diameter portion 53d fits snugly within the extension of the tubular operator's handle 13. The mounting 53 is further supported in radial alignment by a multi-pronged mounting plate 54 preferably formed from a light weight metal to define a circular hub portion 54a for snugly receiving the extension of the operator's handle 13 and a plurality of radially spaced prongs 54b bent inwardly on the ends to form a plurality of toes 54c. The mounting plate 54 is secured to the shell of the body casing 12 in any conventional manner, as, for example, by passing rivets or screws through the toes 54c or by spot welding the toes 54c to the body casing 12.

It will be evident that the entire motor suction unit 52 is adequately supported against radial and axial vibrations by virtue of its forward support in the ring 51 and its rearward support in the mounting 53.

The body casing 12 terminates in a suitable convergent portion and is secured to the operator's handle 13 by a bolt 56 which engages a threaded conductor cord hook 57 located on the other side of the handle 13. The upper portion of the handle 13 houses a conventional electric switch 58 and a strain release assembly indicated generally at 59. Lying adjacent the strain release assembly 59 is a second conductor cord hook 60.

The end of the tubular operator's handle 13 is closed by a plug 61 and a pin 62 connected to the plug 61 supports a ring 63 to facilitate suspended storage of the cleaner as, for example, in a utility closet.

It will, of course, be understood that various details of construction may be varied through a wide range without departing from the principles of this invention and it is, therefore, not the purpose to limit the patent warranted hereon except as is necessitated by the scope of my contribution to the art.

We claim as our invention:

1. In a rigid broom-type vacuum cleaner having a coaxial unit structure, a motor suction unit, an elastic bushing having a recess formed in one end centering and supporting said motor suction unit, said bushing having intersecting lateral and longitudinal passages opening out of the side and other end, respectively, of said bushing for admitting electrical conductors into said motor suction unit, and an operator's handle having a tubular portion receiving said other end of said bushing and arranged to house said electrical conductors.

2. In a vacuum cleaner, a casing, a power driven suction unit positioned in said casing, a tubular operator's handle and resilient mountings in opposite ends of said suction unit for insulating said casing against vibrations of said unit, one of said resilient mountings comprising a bushing partly received in said tubular operator's handle and having formed therein a longitudinal recess opening out of one end of said bushing into said handle and a lateral recess intersecting said longitudinal recess and opening out of the side of said bushing outside of said handle but inside of said casing for passing electrical conductors from said power driven suction unit into the interior of said tubular operator's handle and a switch

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carried by said handle and connected to said conductors for controlling the energization thereof.

3. A motor mounting for a vacuum cleaner, comprising, a casing, a resilient ring in said casing, a motor unit having one end seated on said ring, a tubular operator's handle extending into said casing and terminating adjacent the other end of said motor unit, a resilient bushing in the end of said tubular operator's handle, said resilient bushing seating said other end of said motor unit in cushioned assembly, said bushing having an open ended passageway extending therethrough and having one end opening inside of said handle and having another end opening outside of said handle but inside of said casing, and conductor members in said handle and extending through said passageway outside of said handle and into said casing for attachment to said motor unit, said handle having switching means outside of said casing connected to said conductor members for controlling the energization of said motor unit.

4. A vacuum cleaner comprising a casing, a motor suction unit in said casing, a resilient support member between one end of said unit and said casing, an operator's handle comprising a hollow tube extending into said casing and firmly assembled therewith, and a resilient bushing in the end of said handle, said resilient bushing having a recess in one end thereof receiving the other end of said motor suction unit, the other end of said bushing having a longitudinal recess opening into said hollow tube, said bushing having a lateral recess

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intersecting said longitudinal recess and opening outside of said handle but inside of said casing to form a passageway through said bushing for carrying conductor wires from said motor suction unit into said handle.

5. In a vacuum cleaner, rigid, tubular, coaxial, partially-nested parts consisting of an operator's handle and a casing, a rubber bushing having a pilot portion received in the end of said handle inside of said casing, an electrical motor-suction unit in said casing having one end centered and resiliently cushioned and supported in said bushing, the other end of said motor suction unit being supported in said casing, and electrical conductor wires extending through the inside of said operator's handle, into said bushing, and out of said bushing outside of said handle but inside of said casing for connection to said motor suction unit, said bushing having a recess in one end for receiving and seating said motor suction unit, said bushing having intersecting longitudinal and lateral recesses opening out of the other end and out of the side of said bushing, respectively, to form a passageway for said conductor wires.

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