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SUCTION CLEANER

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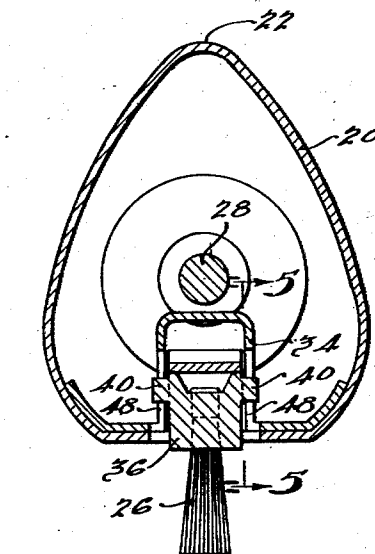
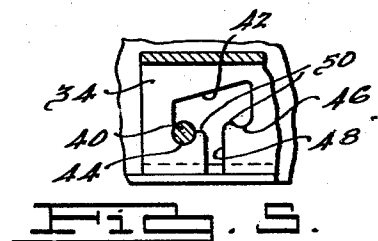
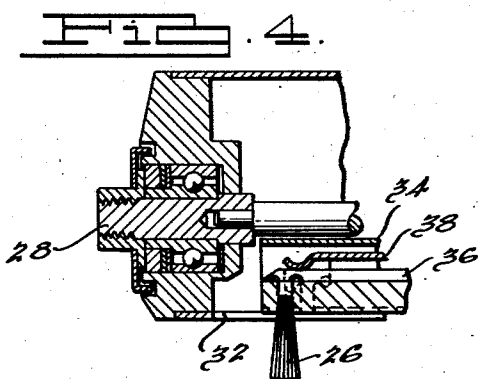
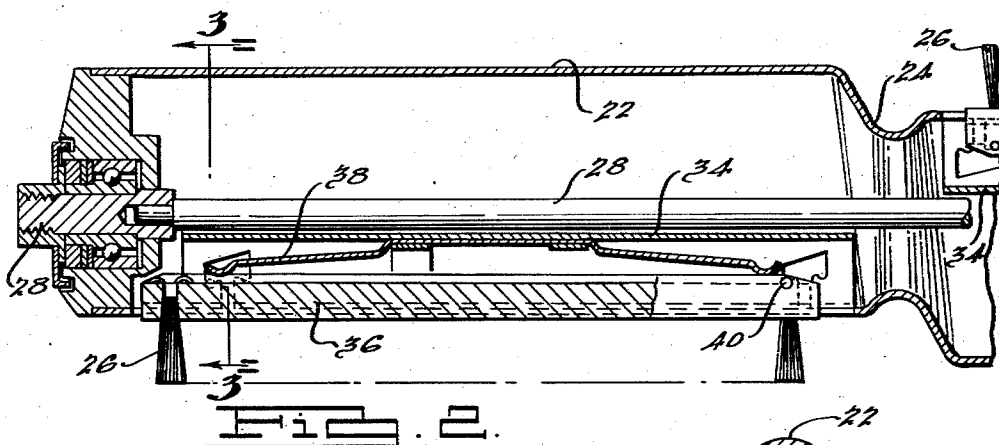
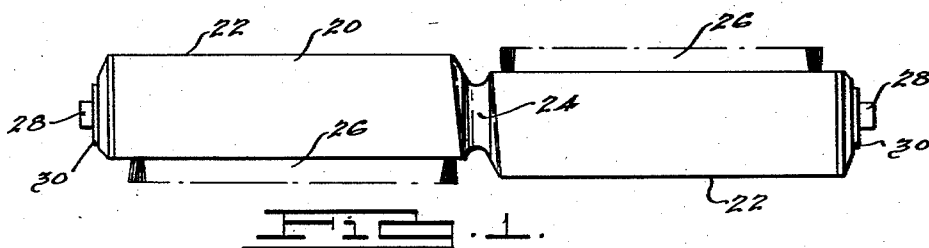


Fig. 3.
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SUCTION CLEANER.

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3 Claims. (Cl. 15—183)

1

This invention relates to suction cleaners and has particular reference to a new and improved construction for the removable brush elements of the rotary agitator of the cleaner.

Principal objects of the invention are to provide:

A new and improved construction for adjustably mounting the removable brush element of the rotary agitator for a suction cleaner;

An adjustable brush mounting for the brush element of a rotary agitator by means of which the position of the brush may be adjusted without removing it from the holder.

Other objects and advantages of the invention will be apparent from a consideration of the following specification taken in conjunction with the accompanying drawing, of which there is one sheet and wherein:

Fig. 1 is an elevational view of a suction cleaner agitator embodying the invention;

Fig. 2 is an enlarged longitudinal sectional view through a part of the agitator;

Fig. 3 is a sectional view along the staggered line 3—3 of Fig. 2;

Fig. 4 is a fragmentary view similar to a part of Fig. 2 but illustrating the brush element in its inner position; and

Fig. 5 is a fragmentary sectional view taken along the line 5—5 of Fig. 3.

The use of an agitator in a suction cleaner is well known to the art. Such agitators are rotatably mounted in the floor nozzle of a suction cleaner and are adapted to beat and/or sweep a surface covering during operation of the cleaner so as to expedite the cleaning of the surface covering which is brought into operative relationship with such nozzle of the cleaner. Such cleaners are also provided with suction creating means so as to induce a flow of air into the nozzle for the purpose of conveying into a suitable dirt-collecting receptacle associated with the cleaner, the dirt dislodged from the surface covering by the rotation of the agitator during the operation of the cleaner. Such agitators normally are driven by the motor of the cleaner in the neighborhood of 3000 R. P. M., but of course may be driven at any desired rate.

An agitator embodying the invention may comprise in general a rotary body or member 20 provided with beating edges 22, a pulley 24, brushes 26, an axle 28, and thread guards 30. The ends of the axle 28 project beyond the ends of the body 20 and provide a means by which the agitator may be operatively and rotatably positioned in the nozzle of the cleaner.

2

The body 20 may be formed of a tubular piece of metal or other suitable material which is formed to provide the beating edges 22 and the pulley 24. A belt (not shown) driven by the motor of the cleaner is adapted to cooperate with the pulley 24 for driving the agitator about the axis of the axle 28.

Directly opposite each beating edge 22 the body 20 may be provided with a slot 32, and a channeled member 34 is arranged inside the body 20 with the channel aligned with the slot 32 in the body. The side flanges of the channeled member 34 may be suitably secured to the inner surface of the body 20 along the sides of the slot 32. The channeled member 34 provides an elongated groove or recess or socket for accommodating the back 36 of the brushes 26.

Each brush 26 comprises a back 36 and a plurality of bristles which may be arranged in tufts which are suitably secured to the back 36. A spring 38 arranged in the bottom of the channeled member 34 bears against the rear of the brush back 36 for biasing the same outwardly. The brush back 36 at each end thereof is provided with a pair of laterally extending lugs or projections 40. Each side wall of the channeled member 34 at each end thereof is provided with a T-slot 42 which is adapted to accommodate the lugs 40. Each T-slot 42 is formed to provide a pair of shoulders 44 and 46, each of which shoulders 44 and 46 is separated from the leg 48 of the T-slot by a hump 50. The lugs 40 on the brush back 36 are so spaced that they may be inserted into the T-slots 42 through the leg 48 thereof. Then by shifting the brush back 36 toward the pulley 24 the lugs 40 may be positioned against the shoulders 46. As the spring 38 biases the brush back 36 out of the slot, it will be evident that the lugs 40 will be held against such shoulder 46. In this position the brush back 36 will be in its innermost position.

The shoulders 44 and 46 are spaced different distances from the axis of rotation of the rotary body 20, say for example the shoulders 44 are positioned $\frac{1}{8}$ inch farther away from such axis than the shoulders 46. Initially the brush back 36 is set so that it is in its innermost position. After the bristles of the brush 26 have become worn, the brush 26 may be positioned farther away from the axis of rotation so as to compensate for the wear of the bristles. Thus by shifting the brush back 36 away from the pulley and so as to engage the lugs 40 with the shoulders 44, an adjustment of the brush 26 to compensate for wear of the bristles may be obtained.

3

In order to shift the lugs 40 out of engagement with the shoulders 46 and into engagement with the shoulders 44 it is necessary to depress the back 36 into its slot against the spring 38 sufficient to permit the lugs 40 to clear the humps 50 and then to shift the brush back 36 away from the pulley and to the other end of the T-slot where the spring 38 will hold the same in engagement with the shoulder 44.

The construction of one-half of the agitator only has been described, but the construction of the other half may be the same, except that the brush 26 and its mounting on the opposite side of the pulley 24 are positioned opposite to the brush 26 as just described.

While the invention has been described with some detail, it is to be understood that the description is for the purpose of illustration only and is not definitive of the limits of the inventive idea. The right is reserved to make such changes in the details of construction and arrangement of parts as will fall within the purview of the attached claims.

I claim:

1. A rotary brush for a suction cleaner comprising a hollow body having a channel shaped member forming an elongated socket therein, a brush back arranged in said socket and having bristles projecting beyond said body, each of the longitudinal side walls of said channel shaped member adjacent each end thereof being relieved to provide groups of shoulders, said shoulders of one group being arranged at a different distance from the axis of rotation of said body than the shoulders of the other group, each of said side walls being provided with at least one shoulder of each group, each longitudinal side of said back being provided with a laterally extending lug adjacent each end thereof, said lugs being selectively engageable with the shoulders of each group to position said back relative to said body, said socket being longer than said back and the shoulders of one group being disposed at one side of the shoulders of the other group so that shifting of said back endwise in said socket will align said lugs with one or the other of said groups of shoulders, said channel shaped member being further relieved radially inward from the surface of said body to provide radially extending slots offset from said shoulders but affording access for seating said lugs against said shoulders so as to permit said brush back to be inserted in and removed from said socket in a radial direction, said lugs and shoulders forming the sole means for retaining said brush back in said socket, and a spring biasing said lugs against said shoulders.

4

2. A rotary brush for a suction cleaner comprising a hollow body having a channel shaped member forming an elongated socket therein, a brush back arranged in said socket and having bristles thereon, each of the side walls of said channel shaped member adjacent each end thereof being provided with a slot, said slots forming shoulders below the surface of said body, each longitudinal side of said back adjacent each end thereof being provided with a laterally extending lug, said lugs being engageable with the shoulders to position said back in said socket relative to said body, said socket being longer than said back, said channel shaped member being further relieved radially inward from the surface of said body to provide radially extending slots offset from said shoulders but affording access for seating said lugs against said shoulders so as to permit said brush back to be inserted in and removed from said socket in a radial direction, said lugs and shoulders forming the sole means for retaining said brush back in said socket, and a spring biasing said lugs against said shoulders.

3. A rotary brush for a suction cleaner comprising a body having an elongated socket therein, a brush back arranged in said socket and having bristles therein, each of the side walls of said socket adjacent each end thereof being provided with a T-slot, said slots forming groups of shoulders, said shoulders of one group being arranged at a different distance from the axis of rotation of said body than the shoulders of the other group, each of said side walls being provided with at least one shoulder of each group, each side of said back adjacent each end thereof being provided with a laterally extending lug, said lugs being selectively engageable with the shoulders of each group to position said back in said socket relative to said body, said socket being longer than said back and the shoulders of one group being disposed at one side of the shoulders of the other group so that shifting of said back endwise in said socket will align said lugs with one or the other of said groups of shoulders, and a spring biasing said lugs against said shoulders, the legs of said T-slots extending into said body from the surface thereof and being arranged so that said lugs may be brought into alignment therewith by endwise shifting of said back so as to permit removal of said back from said socket and separation thereof from said body in a radial direction, said lugs and shoulders forming the sole means for retaining said brush back in said socket.

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