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2,644,190

SUCTION GLEANER CASING ASSEMBLY

Filed Feb. 25, 1949

2 Sheets-Sheet 1

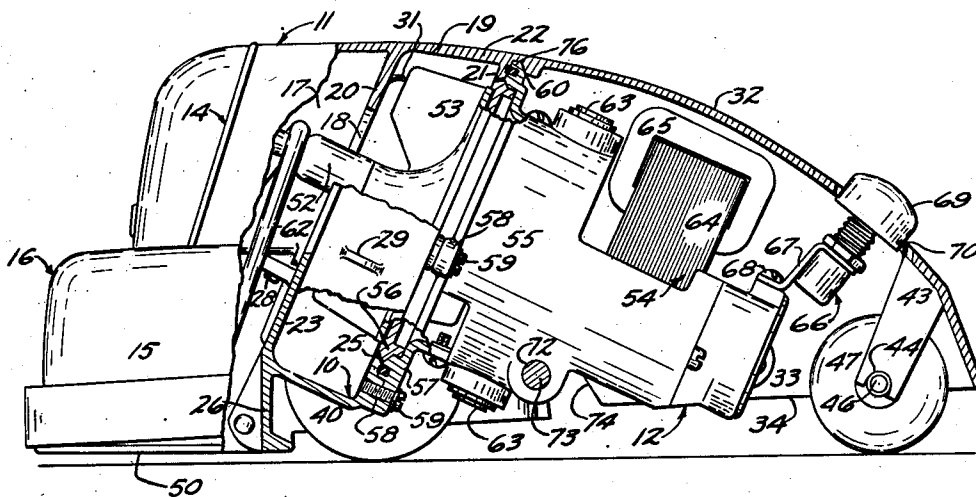


Fig.1

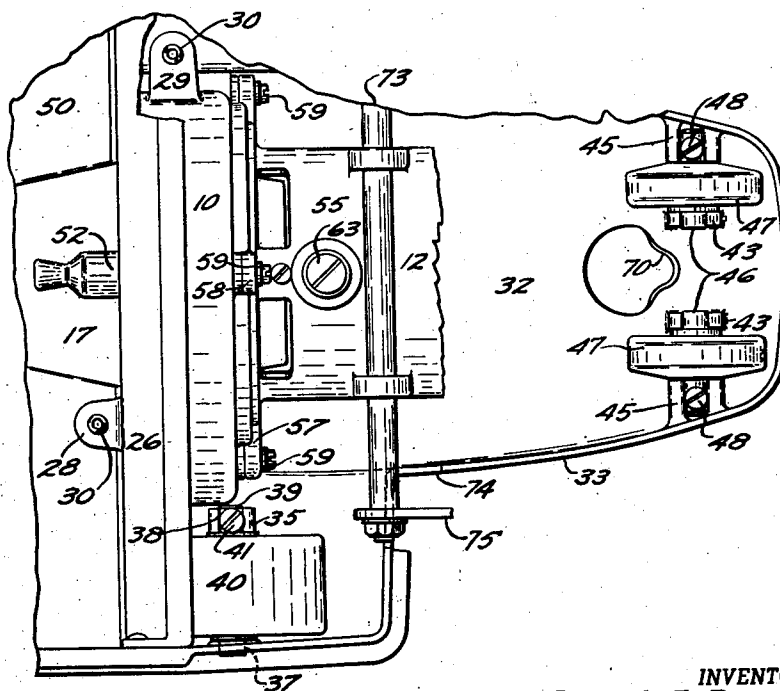


Fig. 3

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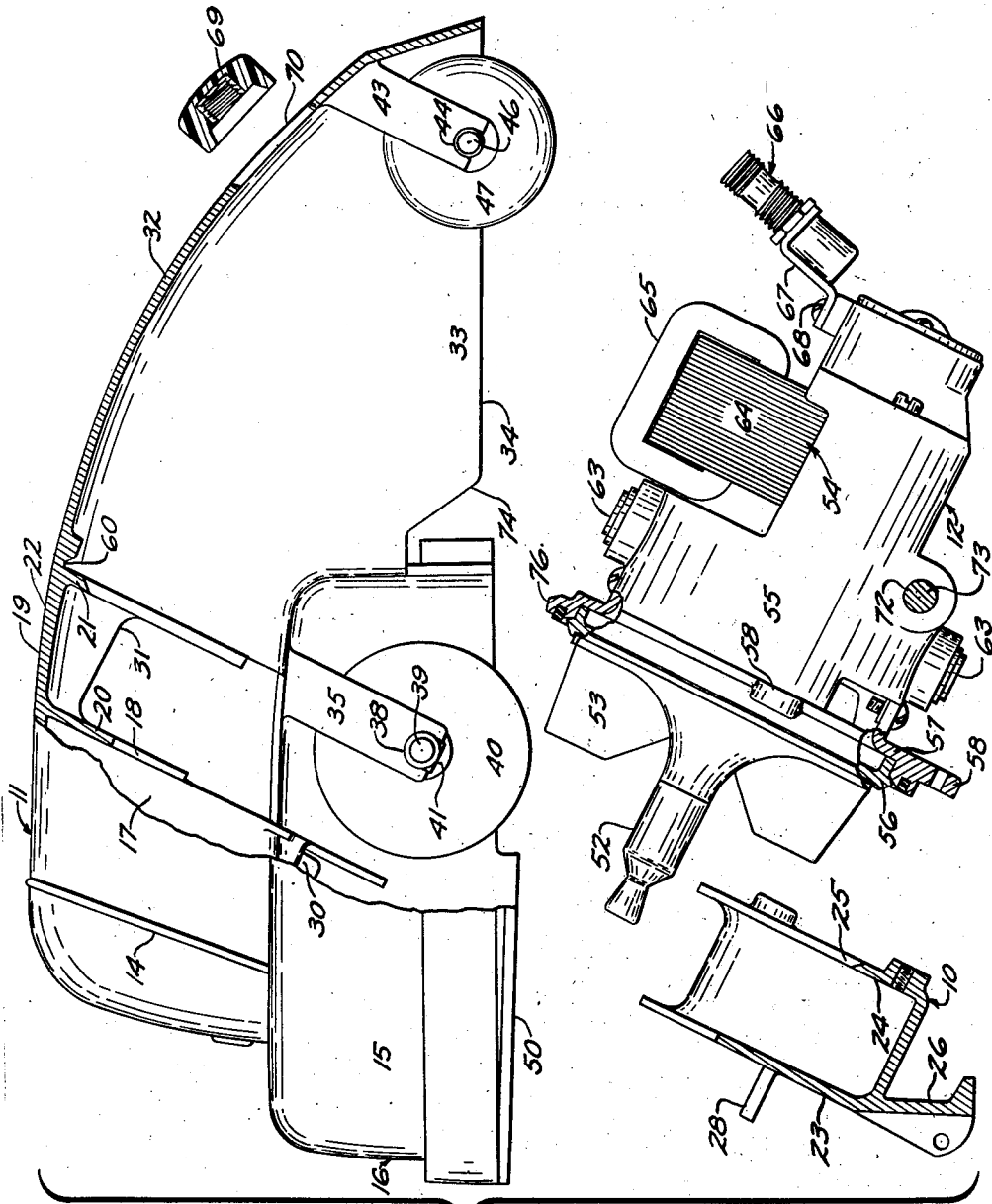


Fig. 2

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SUCTION CLEANER CASING ASSEMBLY

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2 Claims. (Cl. 15-412)

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This invention relates to suction cleaners and more particularly to a novel arrangement of cleaner casing sections and the assembly of a motor-fan unit.

An object of the invention is to provide a new and improved suction cleaner. Another object is to provide a cleaner casing formed in sections which are readily molded or die cast. A further object is to provide a cleaner casing constructed to receive an assembled motor-fan unit to complete the suction cleaner. Other objects and advantages of the invention will be apparent from the following description and drawings wherein:

Figure 1 is a side view with part of the casing removed to illustrate the arrangement of parts;

Figure 2 is an exploded view of the parts prior to assembly; and

Figure 3 is a fragmentary bottom view.

The embodiment of the invention herein disclosed comprises a suction cleaner having a body formed of casing sections 10 and 11 and a motor-fan unit 12 supported within the cleaner body. The casing section 11 includes a front wall 14 and end walls 15-15 of a nozzle 16 provided with a suction air passageway 17 communicating with the fan eye 18 of a fan chamber 19 formed in part by partitions 20 and 21 projecting inwardly from the top wall 22 of the casing section 11.

The other casing section 10 forms the nozzle rear wall 26 and has wall portions 23 and 24 which cooperate with the partitions 20 and 21 to form the fan eye 18 and a fan receiving opening 25 for the fan chamber 19. This casing section 10 is provided with two perforated lugs 28 and 29 which receive pins 30 formed on the casing section 11, and the pins are riveted to permanently attach the two casing sections 10 and 11 to which is connected an unshown dirt filtering bag.

The casing section 11 rearwardly of the fan chamber 19 has a top wall 32 and depending side walls 33-33 the latter defining a downwardly facing opening 34 through which the motor-fan unit 12 is inserted for attachment to the cleaner body. Formed integrally with the casing section 11 are two front wheel supports 35-35 spaced from the adjacent side walls 15, and the latter are each provided with an opening 37 in alignment with a recess 38 at the lower end of each wheel support 35 to receive a pin 39 for a wheel 40, and a screw 41 extends through the pin 39 into each support 35 to hold the pin and wheel in position. Formed integrally with the casing

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section 11 are two rear wheel supports 43-43 provided at their lower ends with a recess 44 each of which cooperates with an apertured boss 45 formed in the adjacent depending side wall 33 to receive a pin 46 on which is mounted a wheel 47. A screw 48 extends through the pin 46 and is threaded into the boss 45 to attach the pin 46 and wheel 47 to the casing section 11.

The openings 37 and recesses 38 for the pins 39 supporting the front wheels 40, together with the apertured bosses 45 and the recesses 44 are drilled in the casing section 11 so that the wheels 40 and 47 are at all times mounted in the same relation with the nozzle mouth 50, whereby all the suction cleaners manufactured will be provided with uniform nozzle height adjustment.

The motor-fan unit 12 includes a belt pulley 52 and a fan 53 both of which are driven by an unshown shaft of a motor 54 disposed in a housing 55 secured at its forward end to a wall 56 arranged between the fan 53 and housing 55. The forward end of the housing 55 has a peripheral flange 57 provided with three apertured lugs 58 to receive bolts 59 threaded into the lower casing section 10 to removably secure the motor housing 55 thereto. A recess 60 is formed between the top wall 32 and the fan chamber partition 21 to anchor the upper portion of the motor-fan unit 12 to the cleaner body. When the motor housing 55 is attached to the lower casing section 10 the wall 56 closes the fan receiving opening 25, and the fan 53 and pulley 52 are disposed in the fan chamber 19 and suction air passageway 17. A belt 62 connects the pulley 52 to an unshown surface agitating member movably mounted in the nozzle 16.

Supported in the housing 55 are oppositely disposed motor brushes 63-63 and a U-shaped field stack 64 which has a portion thereof and its coil 65 exposed and projecting beyond the housing 55. A foot operated switch 66 is mounted on a bracket 67 attached by a screw 68 to the rear end of the motor housing, and a button 69 is removably attached to the switch 66 and projects through an opening 70 in the casing section 11 to receive the operator's foot to control the circuit to the motor 54.

Formed in the motor housing 55 are a pair of openings 72 for a shaft 73 which extends through slots 74 in the depending side walls 33-33 of the casing section 11 to rotatably receive the bail 75 of a cleaner handle, to thereby support the handle on the motor housing.

In assembling the cleaner the lower casing section 10 is riveted at 30-30 to the upper casing

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section 11 to complete the cleaner body. The motor-fan unit 12 with the switch 66 mounted thereon is then inserted through the opening 34 in the underside of the body, the pulley 52 and fan 53 are passed into the air passageway 17 and fan chamber 19 respectively, and the upper portion 76 of the housing flange 57 is placed in the recess 60. There is sufficient space between the motor coil 65 and the casing top wall 32 to permit tilting of the motor-fan unit about the recess 60 to seat the wall 56 in the periphery of the fan receiving opening 25. Thereafter the bolts 59 are threaded into the lower casing section 10 to rigidly secure the motor-fan unit 12 in the cleaner body. During insertion of the motor-fan unit 12 the switch 66 is also properly positioned in the opening 70 to receive the operator's foot.

When it is desired to disconnect the motor-fan unit 12 from the cleaner body, the bolts 59 are removed and the unit pivoted about the recess 60 counterclockwise, as viewed in Figure 1, to pass the lower arcuate portion of the fan chamber wall 56 through the fan receiving opening 25, and thereafter the motor-fan unit is moved through the opening 34 in the underside of the casing section 11.

While we have shown and described but a single modification of our invention, it is to be understood that this modification is to be taken as illustrative only and not in a limiting sense. We do not wish to be limited to the particular structures shown and described, but to include all equivalent variations thereof except as limited by the scope of the claims.

We claim:

1. In a suction cleaner, a casing structure formed in two sections, one casing section defining the rear wall of a suction nozzle and part of a fan chamber, the other casing section defining the remaining walls of the suction nozzle, a part of said fan chamber and having an opening at its underside for inserting a motor-fan unit, said casing sections cooperating to provide a fan receiving opening in said fan chamber for passing a fan therethrough into said fan chamber, said other casing section having means to receive cleaner supporting wheels, a switch opening in said other casing section, a motor-fan assembly inserted as a unit through said opening at the un-

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derside of said other casing section to pass the fan through said fan receiving opening formed by said two casing sections into said fan chamber and the motor into said other casing section, a switch mounted on said motor-fan assembly and having an operating member projecting through said switch opening in said other casing section when said motor-fan assembly is positioned in said casing.

2. In a suction cleaner, a casing structure formed in two sections, one casing section defining the rear wall of a suction nozzle and part of a fan chamber, the other casing section defining the remaining walls of said suction nozzle, a part of said fan chamber and having an opening at its underside for inserting a motor-fan unit, said casing sections cooperating to provide a fan receiving opening in said fan chamber for passing a fan therethrough into said fan chamber, and a motor-fan assembly inserted as a unit through said opening at the underside of said other casing section to pass the fan through said fan receiving opening formed by said two casing sections into said fan chamber and the motor into said other casing section.

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