

Feb. 26, 1946.

H. H. SLOAN

2,395,430

SUCTION CLEANER

Filed Oct. 11, 1941

2 Sheets-Sheet 1

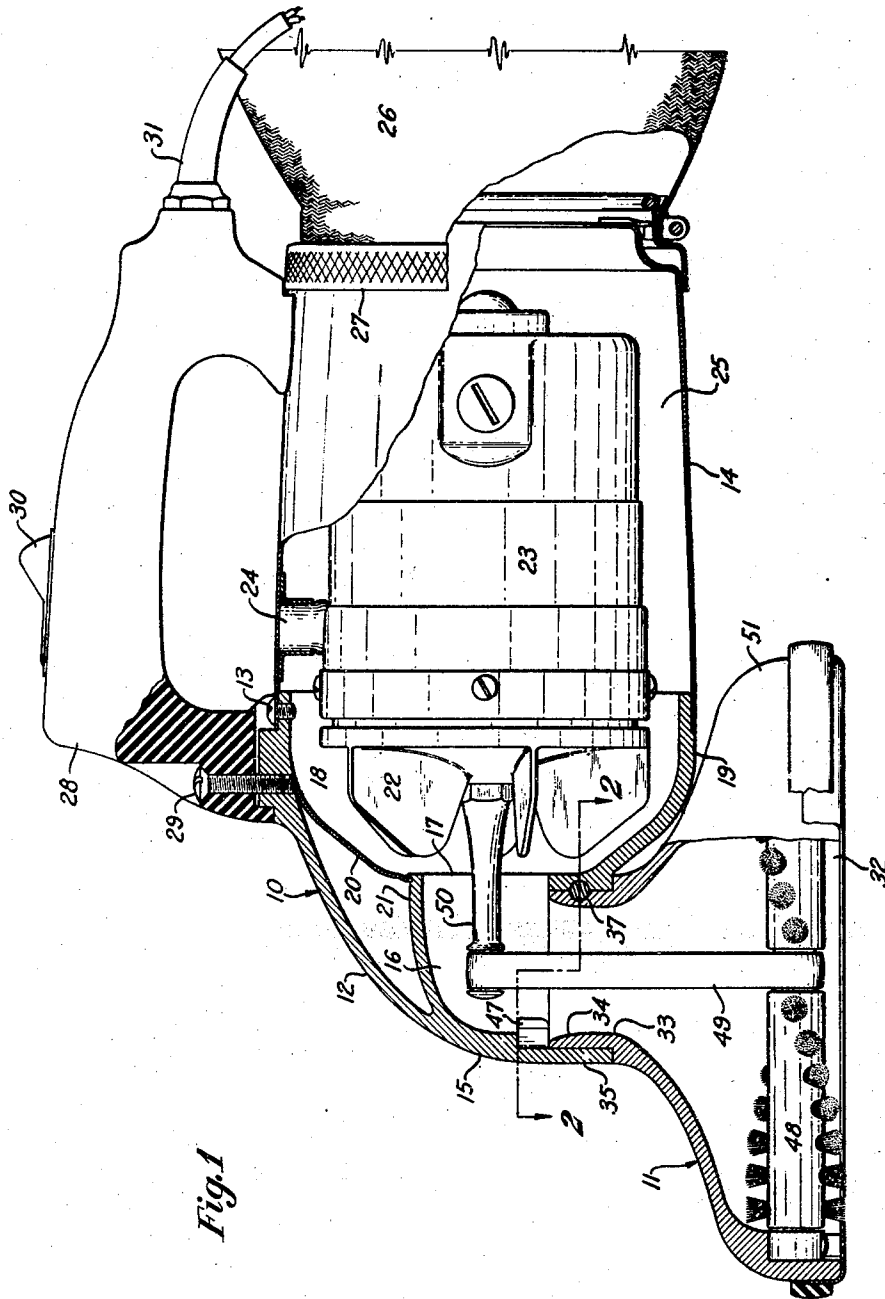


Fig. 1

INVENTOR
Homer H. Sloan
BY
Harry S. Dumas
ATTORNEY

Feb. 26, 1946.

H. H. SLOAN

2,395,430

SUCTION CLEANER

Filed Oct. 11, 1941

2 Sheets-Sheet 2

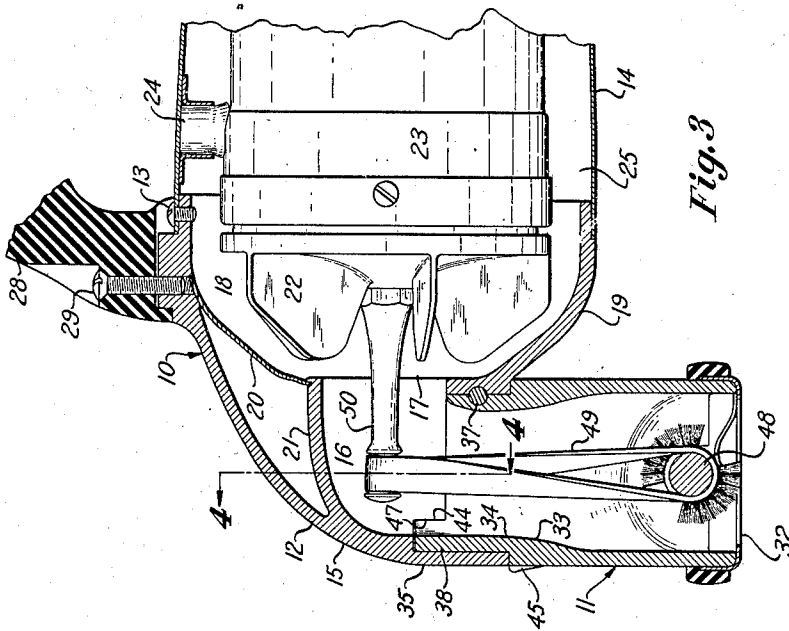


Fig. 3

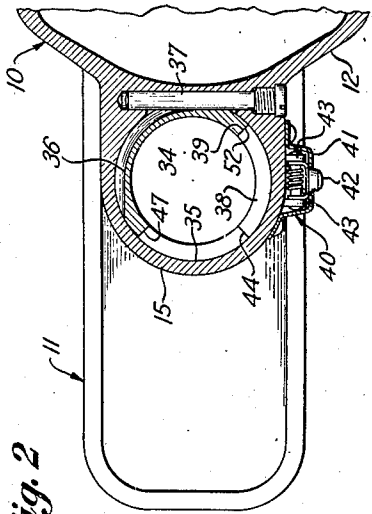


Fig. 2

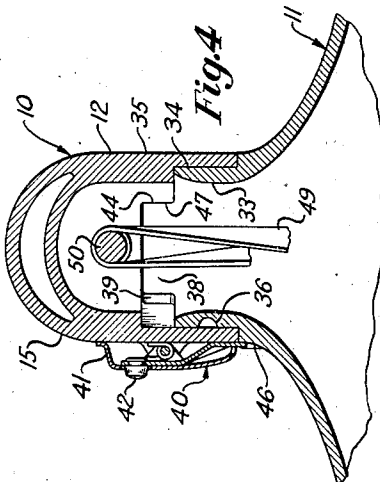


Fig. 4

INVENTOR
Homer H. Sloan
BY
Harry S. Demars
ATTORNEY

UNITED STATES PATENT OFFICE

2,395,430

SUCTION CLEANER

Homer H. Sloan, Dothan, Ala., assignor to The Hoover Company, Canton, Ohio, a corporation of Ohio

Application October 11, 1941, Serial No. 414,573

2 Claims. (Cl. 15-7)

The present invention relates to suction cleaners having a cleaning nozzle mounted for pivotal movement with respect to the cleaner body.

An object of the invention is to provide a new and improved suction cleaner. Another object is to provide a suction cleaner having a nozzle movable with respect to the cleaner body to adapt the cleaner for use in many normally inaccessible places. A further object is to provide a suction cleaner having a belt driven brush in a nozzle movable with respect to the cleaner body. Other objects and advantages of the invention will be apparent from the following description and accompanying drawings, wherein:

Figure 1 is a longitudinal section partly in elevation of an embodiment of the invention showing the cleaner nozzle parallel to the cleaner body;

Figure 2 is a section along the line 2-2 of Figure 1;

Figure 3 is a sectional view showing the nozzle transverse to the cleaner body; and

Figure 4 is a section along the line 4-4 of Figure 3.

The embodiment of the invention herein disclosed comprises a suction cleaner provided with a body 10 at the forward end of which is pivotally mounted a nozzle 11. The body 10 includes a front casing 12 to which is secured by screws 13 a rearwardly extending cylindrical casing 14. At the forward end of the casing 12 is a downwardly disposed elbow 15 defining a passageway 16 having an outlet forming the eye 17 to a fan chamber 18 defined in part by an enlarged portion 19 of the casing 12 and by a metal plate 20 spanning the space between the wall 21 of the passageway 16 and the top wall of the casing 12. Disposed in the fan chamber 18 is a fan 22 mounted on the armature shaft of a motor enclosed in a housing 23 which is supported on brackets 24, only one of which is shown, in the casing 14. The brackets 24 space the housing 23 from the casing 14 to form an annular space 25 therebetween which communicates with a dirt bag 26 removably attached to the end of the casing 14 by a bracket 27. The cleaner is manipulated by a carrying handle 28 attached to the cleaner body 10 by suitable means such as screws 29. A switch 30 is positioned in the handle 28 and is connected to the motor by unshown conductors and to a source of electric current by means of a cord 31 secured to the rear of the handle 28.

The nozzle 11 is provided with an elongated downwardly disposed open mouth 32 which com-

municates with a centrally arranged reduced neck 33 the upper end 34 of which is rotatably telescoped in the lower end 35 of the elbow 15. In order to rotatably secure the nozzle in the elbow 15, the reduced neck 34 is provided with an arcuate slot 36 which slides along a pin 37 threaded into the casing 12. The slot 36 is of such arcuate length as to permit the nozzle 11 to be rotated through an angle of 90 degrees. In order to limit the rotation of the nozzle 11 with respect to the body 10, the neck portion 33 of the nozzle is provided with an upstanding arcuate lip 38 which forms two stops 39 and 44, the latter engaging a shoulder 47 in the casing 12 when the nozzle is arranged transverse to the cleaner body 10, as shown in Figure 4, the stop 39 engaging a shoulder 52 in the casing 12 when the nozzle is moved parallel to the cleaner motor, as shown in Figure 1.

The nozzle 11 is maintained in different operating positions with respect to the body 10 by means of a clamp 40 having a bracket 41 mounted on the elbow 15 and which limits the pivotal movement of a spring biased lever 42 mounted on a pair of ears 43 on the elbow 15. The lever 42 engages slots 45 and 46, respectively, in the nozzle 11 to maintain the latter parallel or transverse to the cleaner body, as shown in Figures 1 and 3. If desired additional slots may be provided in the nozzle 11 to position the latter at different angles with respect to the body 10 within an arc of 90 degrees.

Removably supported in the nozzle mouth 32 is a brush 48 for engaging the surface to be cleaned and a belt 49 extends from the brush 38 through the reduced neck 33 and into the elbow 15 and is connected to a pulley 50 rigidly attached to the motor armature shaft for rotating the brush 48.

In operation, if it is desired to employ the cleaner in the usual manner, that is, moving the cleaner nozzle 11 forwardly and rearwardly over the surface to be cleaned, the spring lever 42 is depressed and the nozzle 11 rotated until the latter is transverse to the cleaner body or motor armature, as shown in Figures 3 and 4. The spring biased lever 42 will engage the slot 46 and locks the nozzle rigidly with respect to the cleaner body 10. In this position of the nozzle, the belt 49 has a quarter turn and upon energizing the motor it rotates the brush 48 to loosen the embedded dirt and the suction created by the fan 22 draws the dirt through the nozzle 11 and elbow 15 into the fan chamber 18 and discharges it

through the annular chamber 25 into the dirt bag 26.

If it is desired to employ the cleaner in confined places, as for example in corners, the lever 42 is depressed and the nozzle rotated 90 degrees to the position shown in Figures 1 and 2, and the spring biased lever 42 engages the slot 45 to lock the nozzle in position. In this position of the nozzle, the flared end 51 thereof extends below the cleaner body 10, as shown in Figure 1, so as not to materially unbalance the cleaner, whereby the operator may easily move the cleaner from side to side and, if desired, forwardly and rearwardly to remove dirt from the surface being cleaned.

I claim:

1. A suction cleaner comprising a body, a nozzle mounted at one end of said body for movement to different adjusted positions, a fan chamber in said body and having an inlet communicating with said nozzle, a motor for driving a fan in said fan chamber and having its driving shaft extending through said fan chamber inlet, a brush rotatably mounted in said nozzle for engagement with the surface to be cleaned, a belt connected to said extended shaft and said brush to rotate the latter, said nozzle being movable

to adjusted positions parallel or transverse to said shaft, and said belt operating to rotate said brush in said adjusted positions with respect to said shaft.

2. A suction cleaner comprising a body, a nozzle mounted on said body for movement to different adjusted positions, a fan chamber in said body and having an inlet communicating with said nozzle, a motor having a shaft for driving a fan in said fan chamber and having its driving shaft extending through said fan chamber inlet, a brush rotatably mounted in said nozzle for engagement with the surface to be cleaned and movable with said nozzle when the latter is moved to said different adjusted positions, and a belt connected to said extended shaft and said brush to rotate the latter, said belt being without twists when said nozzle and its brush are in one adjusted position, said belt being so arranged between said extended shaft and brush that movement of said nozzle normal to said one adjusted position and parallel to said motor shaft places a quarter-turn twist in said belt between said extended shaft and said brush, said belt operating to rotate said brush in any adjusted position of said nozzle with respect to said body.

HOMER H. SLOAN.