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F. RIEBEL, JR

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VACUUM CLEANER

Filed Aug. 30, 1929

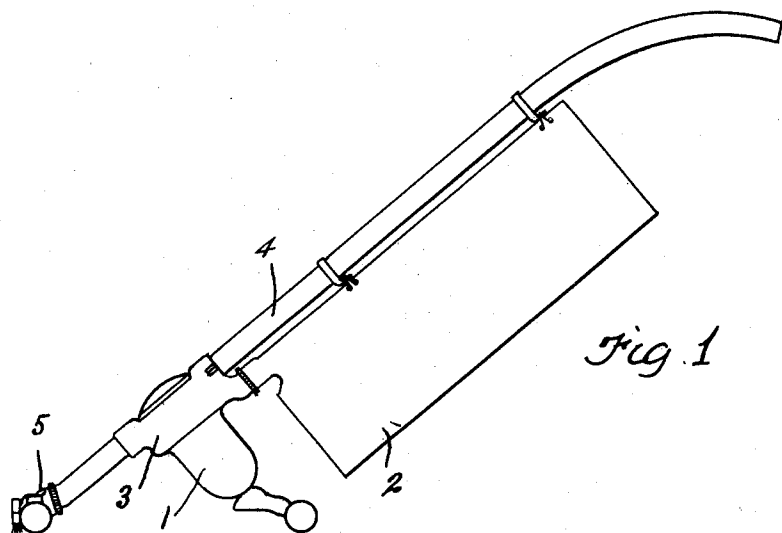


Fig. 1

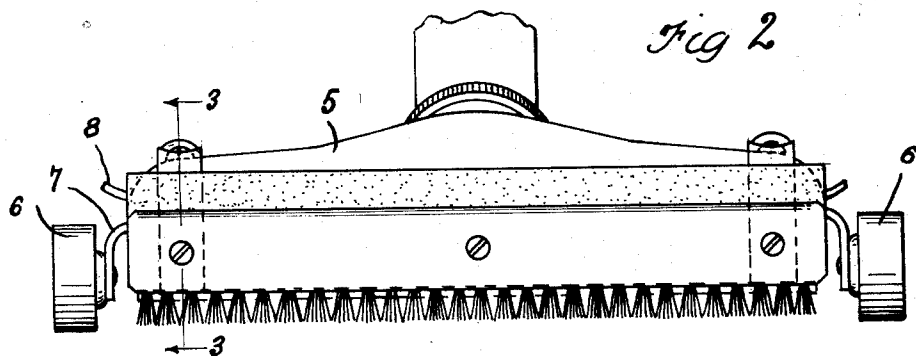


Fig. 2

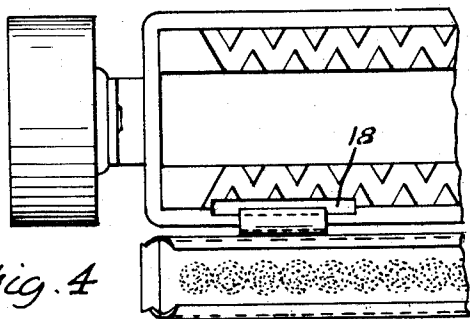


Fig. 4

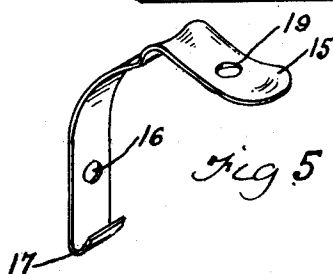


Fig. 5

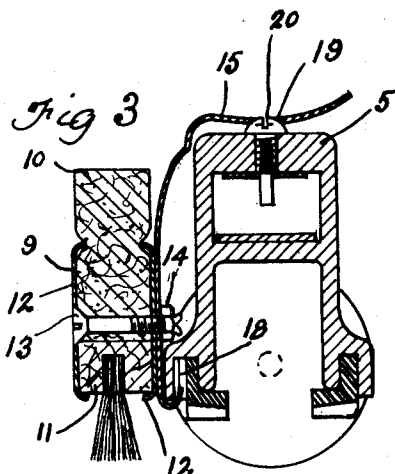


Fig. 3

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VACUUM CLEANER

Application filed August 30, 1929. Serial No. 389,416.

This invention relates to vacuum cleaners and has for an object a method of attaching a thread disturbing brush or other like element to the suction nozzle of such vacuum cleaner in such manner that the polished surface of such suction nozzle will not be marred in attaching and detaching such floor tool as has heretofore been the case in the use of such attachments.

10 To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims, the annexed drawings and the following description setting forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

20 In said annexed drawings:—

Fig. 1 shows in side elevation a vacuum cleaner of a common type embodying the principles of this invention; Fig. 2 is a front elevational view of a suction nozzle showing 25 a floor tool attached thereto; Fig. 3 is a vertical sectional view along the lines 3—3, Fig. 2; Fig. 4 is a fragmentary bottom view of Fig. 2; and Fig. 5 is an isometric projection of the spring clamp used in attaching the 30 floor tool to the suction nozzle.

Referring more specifically to the drawings and especially Fig. 1, the vacuum cleaner here shown is of the usual type having a motor element 1, an air filtering and dust collecting element 2, suction chamber 3, tubular handle 4, and suction nozzle 5. The suction nozzle 5 shown more specifically in Fig. 2 has supporting wheels 6 secured thereto by means of wheel mountings 7 and 8, said wheel mountings being more fully described in my co- 40 pending application filed February 27, 1929, Serial No. 342,979. Attached to the front of said suction nozzle 5 is a floor tool 9, said floor tool being composed of a flexible element 10 and a brush securing element 11. Said flexible element 10, which is usually felt or other like material, and the brush retaining element 11, which may be wood or similar material, are united by means of securing plates 12 extending lengthwise of such elements 10 and 11 50

and are secured in the retaining position shown in Fig. 3 by means of a plurality of bolts 13 extending therethrough and secured by nuts 14. The securing bolts 13 adjacent to the end of said floor tool also secure the spring clip members 15 to said floor tool. The spring clip member 15 has an aperture 16 formed therein for engagement with the securing bolt 13, and being secured to the floor tool by means of this bolt alone, is permitted to rotate about said retaining bolt 13. Rotation of the spring clip member 15 with respect to the floor tool permits the floor tool to be attached to the suction nozzle with either the brush or the flexible edge in the downward direction. The spring clip 15 has its lower end 17 bent in a substantially U-shape to present an engaging means for the spring clip in the aperture 18 formed therefor in the lower face of the suction nozzle as most clearly shown in Fig. 4. Adjacent the upper end of the spring clip 15, an aperture 19 is formed to engage the boss 20 on the upper face of the suction nozzle 5. The boss 20 for retaining the spring clip in operative position is preferably hemispherical in form and of greater diameter than the aperture 19 formed therefor in the spring clip 15. The diameter of said boss 20 being greater than the diameter of said aperture 19 prevents the spring clip from coming in contact with the polished surface of the suction nozzle 5, thereby preventing the polished surface from becoming marred when such spring clip is attached and detached from such nozzle. The boss 20 may preferably be the head of the screw employed in this type of nozzle to secure the wheel mountings 7 and 8 in the sockets formed therefor in the end of suction nozzle 5.

It will be seen that a floor tool may be attached to a suction nozzle by means of a spring clip without in any way marring the highly polished surface which is common to such suction nozzles. Also, by a mere rotation of the spring clips, the floor tool which they secure may be attached to such nozzle so as to present either of its longitudinal edges to the surface to be either cleaned or polished, 100

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

- 10 1. The combination with a suction nozzle, of a floor tool, a reversible clip for attaching said floor tool to said nozzle including a member to engage the nozzle from below, an aperture formed near one end of said clip, and a boss on the upper side of said nozzle to secure said clip, said boss having a reduced upper end to engage said aperture in said clip and secure it out of engagement with the surface of the nozzle.
- 15 2. The combination with a suction nozzle, of a floor tool, a reversible clip attached to said floor tool for securing said tool to said nozzle, an aperture formed near one end of said clip, a recess in the lower face of said nozzle adapted to receive the other end of said clip, and a boss on the upper surface of said nozzle, said boss being hemispherical in shape and of a larger diameter than the aperture in said clip.
- 20 3. In combination with a suction nozzle provided with a boss on its upper surface, a floor tool, a clip attached to said floor tool for securing said tool to said nozzle including a lower member to engage said nozzle from below and an upper member formed to receive a portion only of said boss whereby the clip will be supported by the boss out of contact with the upper surface of the nozzle.
- 25 4. In combination with a suction nozzle provided with a hemispherical boss on its upper surface, a floor tool, a clip attached to said floor tool for securing said tool to said nozzle including a lower member to engage said nozzle from below and an upper member formed to receive a portion only of said boss whereby the clip will be supported by the boss out of contact with the upper surface of the nozzle.
- 30 5. In combination with a suction nozzle provided with a boss on its upper surface, a floor tool, a clip attached to said floor tool for securing said tool to said nozzle including a lower member to engage said nozzle from below and an upper member formed to receive a portion only of said boss whereby the clip will be supported by the boss out of contact with the upper surface of the nozzle, said clip having at its opposite end a hook, and a recess in the lower face of said nozzle adapted to receive said hook.
- 35 6. In combination with a suction nozzle provided with a boss on its upper surface, a floor tool, a clip securing said floor tool to the nozzle, including a lower member engaging the nozzle from below, an intermediate por-

tion to which the tool is secured, and an upper portion positioned substantially parallel to the upper face of the nozzle, and bowed downwardly to provide an intermediate lowermost portion said lowermost portion being formed to receive said boss.

Signed by me, this 28th day of August, 1929.

FREDERICK RIEBEL, JR.

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