

Sept. 14, 1926.

1,599,991

H. S. DEMAREE
SUCTION SWEEPER
Filed Oct. 15, 1923

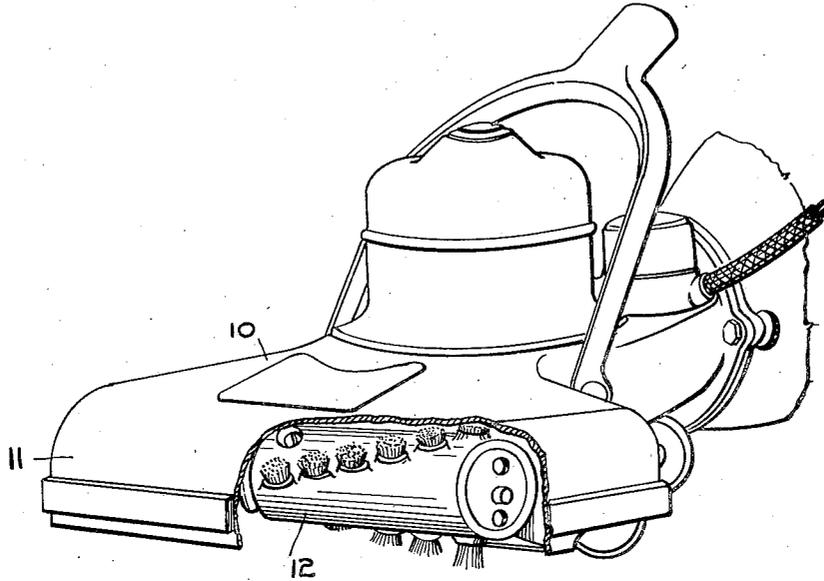


Fig. 1.

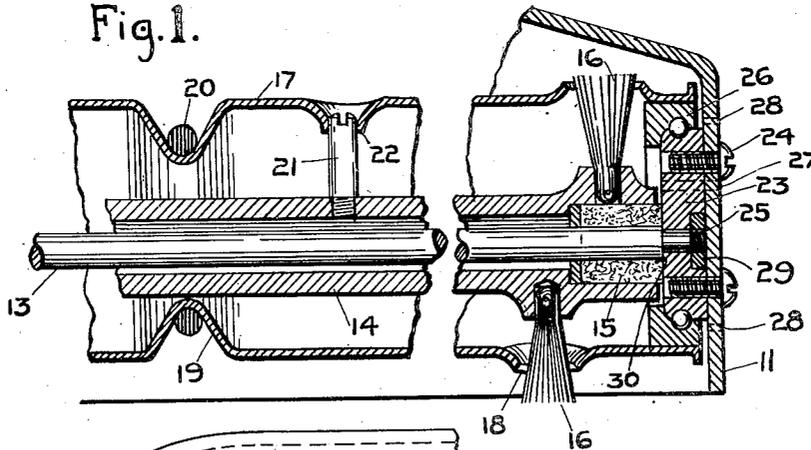


Fig. 2.

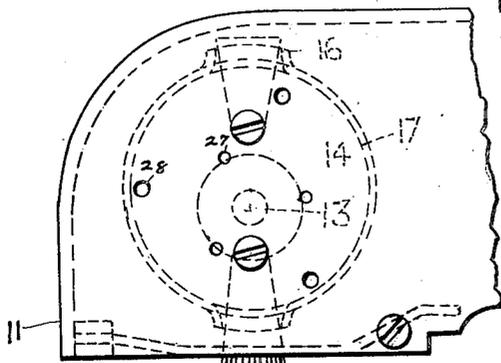


Fig. 3.

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SUCTION SWEEPER.

Application filed October 15, 1923. Serial No. 668,466.

In suction sweepers as heretofore constructed, which have been provided with a rotating brush, it has been found that in course of time the brush becomes clogged with hairs, thread, lint, and other dirt and débris of this character. Such clogging of the brush naturally decreases its efficiency due to interference with the normal bristle action, and also necessitates the cleaning of the clogged brush, which at its best is rather a tedious and more or less a dirty proceeding.

The object of my invention is to provide an improved means whereby the bristle tufts of the rotating brush of a suction sweeper are automatically cleaned during its operation, otherwise, one wherein the brush may be termed self-cleaning.

Other objects and advantages of the structure herein disclosed will be evident from the description of the structure shown in the drawings wherein—

Figure 1 is a perspective view of a suction sweeper, parts being broken away to show the application of my invention.

Figure 2 is a longitudinal sectional view of the rotatable brush showing the application of the self-cleaning member, and

Figure 3 is an end elevation of the structure shown in Figure 2.

In the drawings, wherein like numerals indicate similar parts in all the figures, a suction sweeper having a suction fan and operating means is shown which is indicated generally by the numeral 10. Mounted in the nozzle or intake 11 of the cleaner is a brush assemblage designated generally by the numeral 12. The brush assemblage as disclosed in the drawings comprises a central solid shaft 13 on which is mounted brush roll body 14, there being provided between shaft 13 and brush roll 14 a bearing indicated at 15. Brush roll body 14 is provided with spirally arranged bristle tufts indicated at 16. A brush protector 17 is provided which comprises a substantially cylindrical member having openings as indicated at 18, these openings being so arranged as to register and cooperate with the bristle tuft 16. Brush protector 17 is provided, as at 19, with a depressed portion to serve as a pulley to receive the belt 20 to cause rotation of the brush assemblage. In order that the brush protector and brush roll body may rotate in unison, there is provided a connecting

member such as 21, which, as shown, comprises a member radially connected with the brush roll body, the upper end being slidably received in an opening in the brush protector, as at 22.

It is to be noted at the openings 18 in the brush protector member that the material is somewhat extruded and the edges more or less rounded in order that there will be no tendency of the protector member to cut off the ends of the bristle tuft. For the mounting of the brush assemblage in the intake 11 there is provided a block, such as 23, secured to the ends of the nozzle by means of screws, indicated at 24. This block 23 is provided with an eccentric opening to receive the ends of the shaft 13, as indicated at 25. For mounting the brush protector, there is provided an annular member 26 secured interially thereof, and having an interior bearing surface cooperating with the exterior surface of bearing block 23.

From a description given above it will be seen that the brush protector 17 is mounted eccentrically of the brush body 14 and therefore eccentrically with respect to the bristle tufts 16 so that by operation of belt 20 they will rotate eccentrically and as any particular brush tuft turns from the position at the bottom of the intake opening towards the top thereof, the protector will move outwardly along the tuft in a direction from the base towards the outer end, thus causing any dirt, hair, etc., which may be adhering to the tuft to be pushed toward the outer end of the tuft.

For the purpose of assisting in removing dirt from the ends of bristle tuft and also to protect the bearings from the dust and dirt which may get into them because of their location in the suction nozzle of the machine where there is quite a considerable amount of dirt and dust brought up by the brush, there is provided through the end walls of the nozzle and through the block 23 a hole, as indicated at 27 so that air from the exterior of the machine may be drawn into the interior of the brush protector cylinder 17, and then outwardly through openings 18 about the ends of the bristle tuft, it being understood, of course, that this air flow is induced by the suction in the intake nozzle of the suction cleaner. In order to further protect the bearing there are other openings 28 provided in the end wall of

the nozzle so that further air may be drawn therethrough and thus create a draft through the space between the end wall of the nozzle and member 26, which draft of air will be in opposition to the movement of dirt and dust towards the bearing surface.

It should also be noted that the current of air coming in through openings 27 will, because of its direction away from the bearing surfaces, prevent dirt and dust getting into the bearing from the interior side thereof. It will thus be seen that by means of the construction illustrated and above described that I have provided simple and convenient means to prevent fouling of the bristle tufts of the rotating brush in the suction cleaner, and at the same time to have further provided means whereby the bearings of the brush are protected from fouling by the use of air current as described.

In order that the entire brush assemblage may form a unitary structure for ease in insertion in and removal from the nozzle the ends of shaft 13 are screw threaded to receive nut 29 which draws block 23 up against shoulder 30 of shaft 13, thus firmly securing together the separate elements into a single unitary structure. Of course, it is to be understood that the application of my invention as illustrated and described is illustrative only, and is a particular adaptation of the structure which may readily be varied to suit the particular construction in which it is desired to apply my invention.

I claim:—

1. In a suction sweeper having an intake nozzle, a self cleaning brush assemblage journaled for rotation within said nozzle said assemblage comprising a journaled brush body having brush tufts secured thereto and a tubular housing surrounding said brush body and journaled eccentrically thereto, the housing having apertures therein through which the brush tufts project.

2. In a suction sweeper having an intake nozzle, a self cleaning brush assemblage, comprising a journaled brush body having brush tufts secured thereto and a tubular housing surrounding said brush body and journaled eccentrically thereto, the housing having apertures therein through which the brush tufts project, there being provided a driving connection between the brush body and the housing.

3. In a suction sweeper having an intake nozzle, a self cleaning brush assemblage

journaled for rotation within said nozzle, said assemblage comprising a journaled brush body having brush tufts secured thereto and a tubular housing surrounding said brush body and journaled eccentrically thereto, the housing having apertures therein through which the brush tufts project, the housing being provided with a portion serving as a driven pulley.

4. In a suction sweeper having an intake nozzle, a self cleaning brush assemblage journaled for rotation within said nozzle, said assemblage comprising a journaled brush body having brush tufts secured thereto and a tubular housing surrounding said brush body and journaled eccentrically thereto, the housing having apertures therein through which the brush tufts project, the housing being provided with a portion serving as a driven pulley, there being provided a driving connection between the brush body and the housing.

5. In a suction sweeper having an intake nozzle, a self cleaning brush unit journaled for rotation therein, said brush unit having a brush body and a tubular housing thereabout, in combination with means for admitting air between said brush body and housing.

6. A unitary self cleaning brush assemblage, for suction sweepers, comprising support members, a shaft mounted in said support members, a brush tuft carrying body mounted for rotation on said shaft, a tubular housing surrounding the brush tuft carrying body and provided with brush tuft receiving apertures, the housing being mounted on the support members eccentrically with relation to said shaft.

7. A unitary self cleaning brush assemblage, for suction sweepers, comprising support members, a shaft mounted in said support members, a brush tuft carrying body mounted for rotation on said shaft, a tubular housing surrounding the brush tuft carrying body and provided with brush tuft receiving apertures, the housing being mounted on the support members eccentrically with relation to said shaft and means securing the assemblage as a unit comprising shoulders on the shaft and means securing the support members against said shoulders.

Signed at Chicago, in the county of Cook, and State of Illinois, this 4th day of October, A. D. 1923.

HARRY S. DEMAREE.