

July 21, 1931.

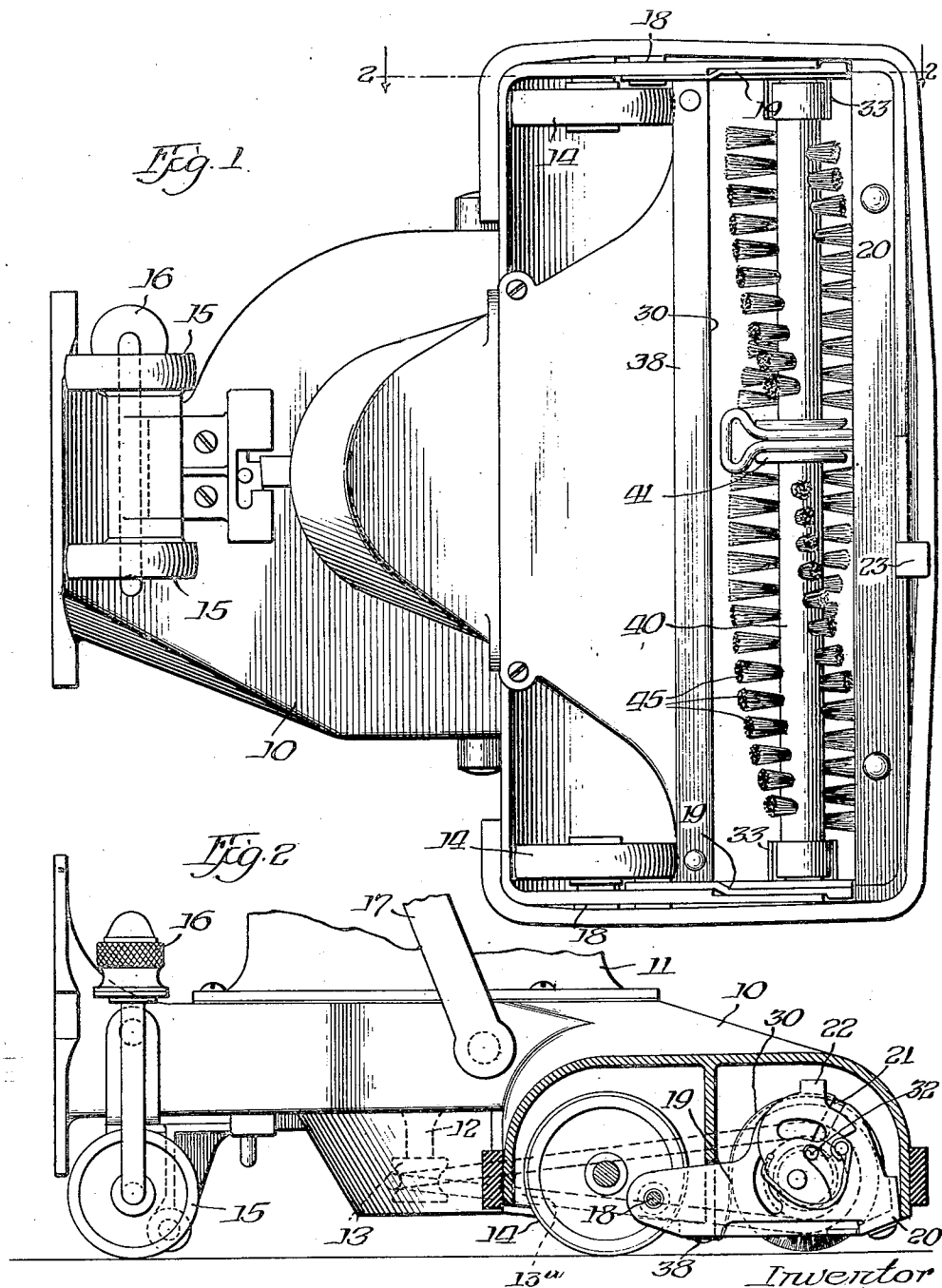
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1,815,225

CLEANER

Filed Nov. 11, 1927

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

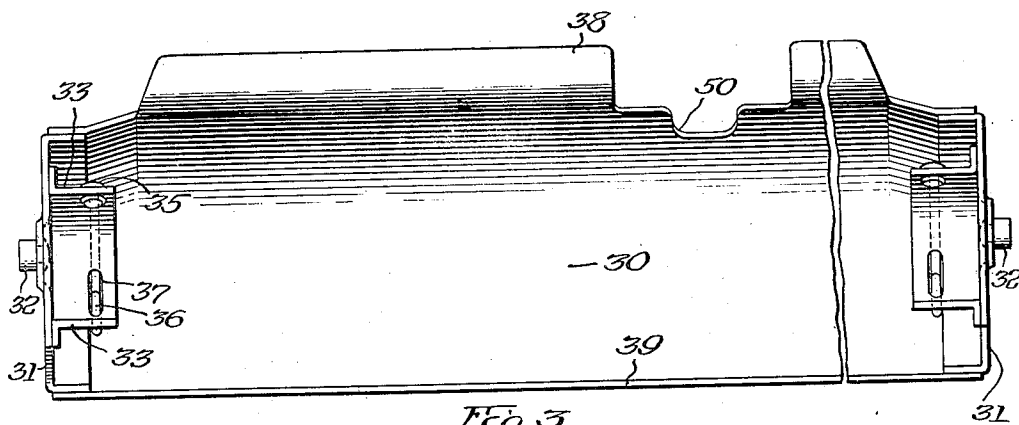


Fig. 3.

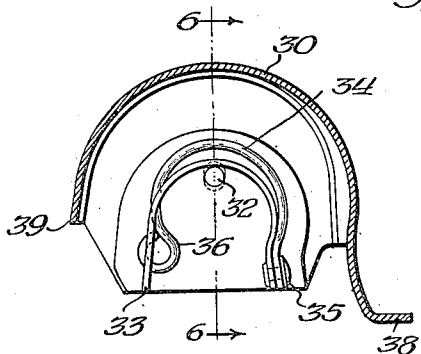


Fig. 4.

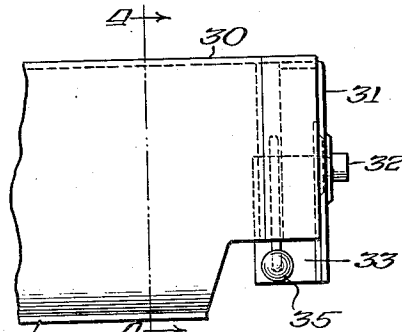


Fig. 5.

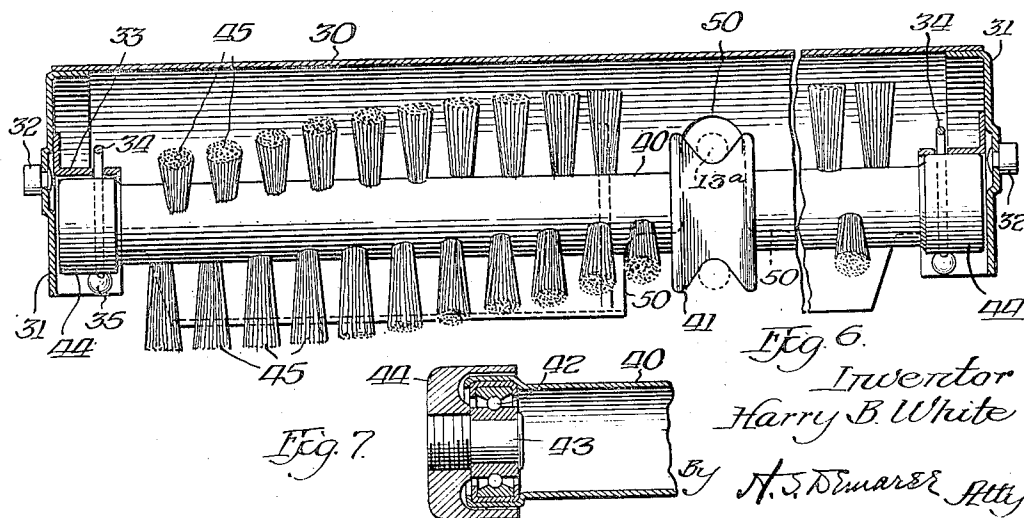
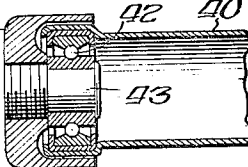


Fig. 6.

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Fig. 7.



UNITED STATES PATENT OFFICE

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CLEANER

Application filed November 11, 1927. Serial No. 232,518.

It is an object of this invention to provide a floor cleaning and polishing brush particularly adapted for cleaning and polishing hardwood floors and linoleum floor coverings. An additional object is to provide means whereby such cleaner comprises an accessory to a machine which is already in widespread use and it is therefore unnecessary to purchase an entire additional machine. At their cheapest, floor polishing machines are relatively costly, at least, such as can be said to do such work satisfactorily.

Since this cleaning and polishing member is an accessory to a household machine in widespread use, a suction cleaner, it is necessary that means be provided to prevent polish and wax being thrown on the interior of the suction cleaner, and it is also advisable to provide means preventing ingress of air to the fan since by preventing such ingress of air the fan operates in a substantial vacuum, thus operating with decreased power input and in this way leaving more of the power of the motor available for operation of the polishing brush.

Because of the facts just stated, it is a further additional object of the invention to provide a shroud for the polishing brush which shroud substantially seals off the fan intake.

Still other and further objects of the invention will be apparent from inspection of the drawings and on reading the accompanying specification, each considered in the light of the disclosure of the other.

In the accompanying drawings;

Figure 1 is a bottom view of a suction cleaner showing a specific embodiment of the polishing brush and its mounting therein;

Fig. 2 is a side elevation of the machine shown in Fig. 1, part being shown in section on line 2—2 of Fig. 1;

Fig. 3 is a bottom view of the shroud showing the trunnions for mounting the shroud and the means for mounting the polishing brush in the shroud;

Fig. 4 is a section on line 4—4 of Fig. 5;

Fig. 5 is a side elevation of one end of the shroud;

Fig. 6 is a section on line 6—6 of Fig. 4, the brush being shown in elevation; and

Fig. 7 is a section of the brush end construction.

The invention is shown and described in connection with a specific suction cleaner, but it is to be distinctly understood that this is done only in order that the invention may be clearly illustrated and described. The generic inventions shown are applicable to mechanical interpretations and mechanical redesigns for adaptations to any suction cleaner which is provided with a driven brush or agitator mounted in the nozzle opening.

The inventions are shown as applied to a suction cleaner, indicated generally at 10, having an electric motor 11. Motor shaft 12 has mounted on its lower end a pulley 13. A belt, 13^a, running over pulley 13 drives the polishing brush or the usual brush member, which will be hereafter referred to as the agitator and is the member employed when the machine is operating as a suction cleaner.

The suction cleaner 10 is mounted on front carrier wheels 14 and rear castor wheels 15. The rear wheels are adjustable vertically by means of the adjustment indicated generally at 16. A pivoted handle is provided, the lower end of its mounting bail being shown at 17.

In the nozzle of the cleaner there is provided a pivoted mounting frame pivoted at 18 and comprising side members 19 and front connecting member 20.

For mounting the agitator or polishing brush in the mounting frame, a slot 21 is provided in each side frame member 19 and the agitator shaft or shroud trunnions slide down in these slots. The shaft or trunnions are seated in the slots and held in place by latch members 22 which will not be described in full since their construction is not the essence of this invention.

A latch 23 is provided to hold the pivoted mounting frame in position and to prevent its swinging out unexpectedly when the machine is in use.

The floor polishing attachment unit comprises primarily a shroud member 30 having a trough-like shape with end plates 31 which

are cupped and are secured to the trough-like portion in any appropriate manner, such as by welding or by rivets.

Exteriorly end plates 31 are provided with trunnions 32 shown as riveted to the end plate. Interiorly the end plates have projecting flanges 33 substantially U-shaped as shown clearly in Fig. 4. These flanges are appropriately secured to end plates 31 by welding or riveting.

A substantially U-shaped spring member 34 is riveted at 35 outside of U-flange 33 and the free end of spring 34 is bent inwardly at 36 to project inwardly through opening 37 in flange 33.

The polishing brush comprises a shell body portion 40 which has mounted approximately centrally a pulley 41 and at each end a bearing 42. The inner bearing race carries a short stud 43 on which is mounted the bearing guard and mounting member 44. The shell body 40 has inserted therein a core and appropriate holes are provided in the shell such that bristle tufts 45 can be inserted and secured in the core.

The polishing brush is mounted in the shroud 30 by insertion of brush mounting members 44 into the open end of flanges 33 after which a slight push on the brush will displace free end 36 of spring 34 so that the member 44 may pass the spring end and seat in the rounded portion of U-flange 33. Spring end 36 returns to its original position to retain member 44 seated.

With the mounting frame out of the nozzle, swung on its pivots 18 to a position outside the nozzle mouth, the latch members 22 are moved counterclockwise, as viewed in Fig. 2, to allow free entry of trunnions 32 into slots 21. Shroud 30 with the polishing brush in place is then placed in the mounting frame by sliding the trunnions 32 down slots 21 and latch 22 is closed. The frame with the polishing brush in place is then swung into the mouth of the cleaner and is in position to be driven from pulley 13 by a belt running over pulleys 13 and 41.

Attention is particularly directed to the construction of shroud 30 which is provided with a flange 38 which seats on the rear edge of the nozzle opening and to the length of the front edge of the shroud at 39 which is cut off to seat against the upper edge of connecting member 20 of the mounting frame 19.

It will thus be seen that the nozzle is closed off by the shroud and that any polish or wax thrown by the brush will be thrown on the inside of the shroud and kept out of the cleaner proper. The shroud at the back has a small cut out portion at 50 to provide clearance for the driving belt.

It will be seen that the inventions herein disclosed provide means whereby a suction cleaner may quickly be converted for use as a floor polisher and that by making the

shroud for the polishing brush as described, the interior of the cleaner will be protected against fouling and that entrance of air to the fan is almost entirely prevented. The polisher unit is cheap to manufacture but is of strong and rugged construction.

I claim:—

1. In a suction cleaner having a body formed with a nozzle, a frame permanently secured to and movable relative to said body, a supporting member removably carried by said frame in said nozzle of such size as substantially to close said nozzle, and a polishing member revolubly and detachably mounted within said supporting member within said nozzle.

2. In a suction cleaner, the combination of a suction cleaner body having a nozzle, a polishing member, supporting means within the nozzle partially surrounding said polishing member and having trunnions thereon, means cooperating with said trunnions for removably mounting said supporting means in said cleaner body, said polishing member being revolubly mounted in said supporting means, and said trunnions being located above the axis of said polishing member.

3. In a suction cleaner having a pivoted mounting frame, a casing, trunnions on the casing for mounting in the pivoted frame and a polishing brush revolubly supported in the casing, said frame being pivoted rearwardly of the nozzle of said cleaner.

4. A floor polishing attachment comprising a substantially semi-cylindrical shroud member, trunnions positioned externally on the ends of said member, brush receiving mountings positioned internally on the ends of said member and a polishing brush secured in the brush receiving mountings.

5. A floor polishing attachment adapted for use in the nozzle of a suction cleaner comprising a substantially semi-cylindrical shell having end walls, a rotatable brush in said shell, said end walls having on their interior sides supports for the ends of said rotatable brush, and on their exterior sides trunnions adapted to support the cylindrical shell in the nozzle of a suction cleaner.

6. A floor polishing attachment for suction cleaners, comprising a rotary brush, and a semi-cylindrical shell extending the entire length of the brush and partially enclosing it, said shell having supports for said brush and trunnions by which it is supported in the suction cleaner said trunnions being above the axis of the brush.

Signed at North Canton, in the county of Stark and State of Ohio, this 5 day of November, A. D., 1927.

HARRY B. WHITE.