March 12, 1957 E. L. VERHAGEN 2,784,433

FLOOR POLISHER WITH ATTACHMENT FOR CLEANING RUGS

Filed April 29, 1953

FIG. 1

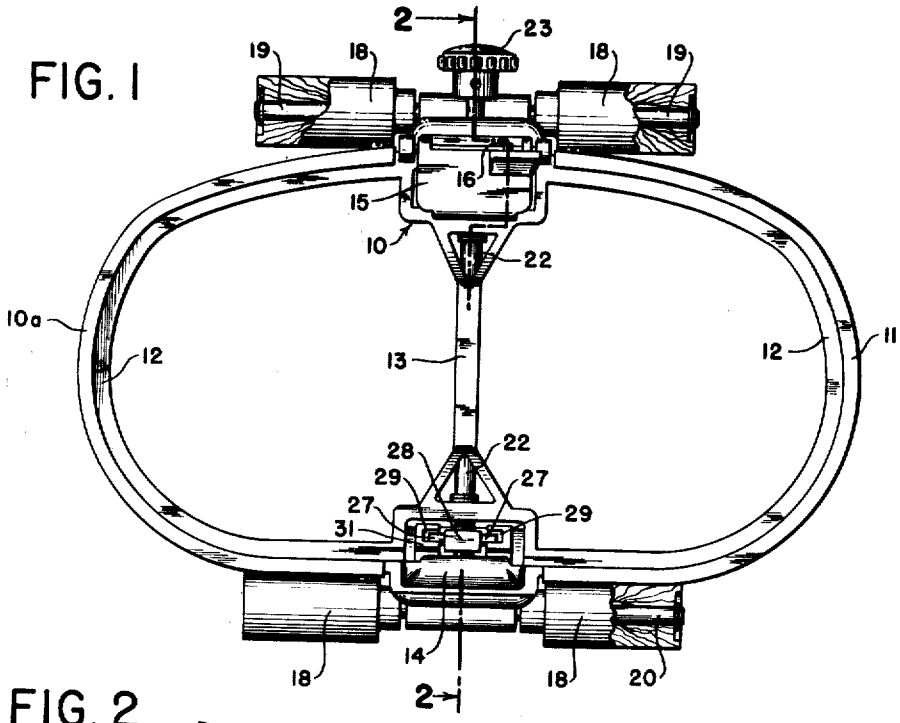


FIG. 2

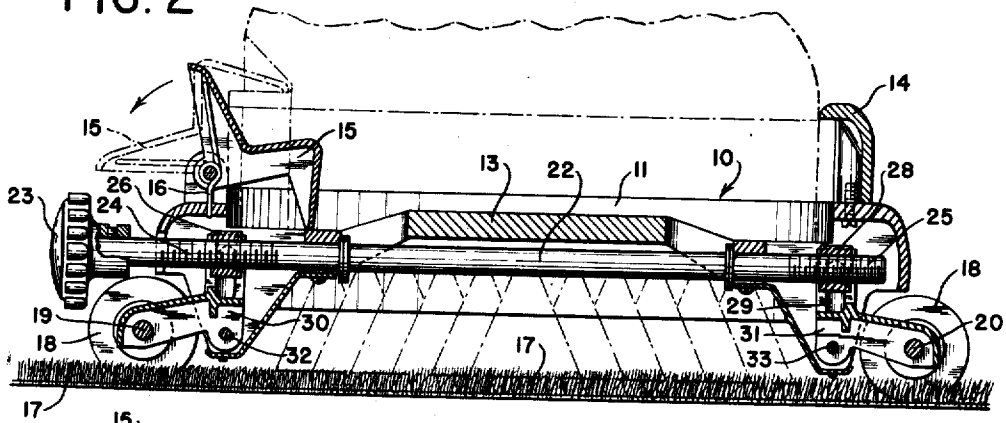
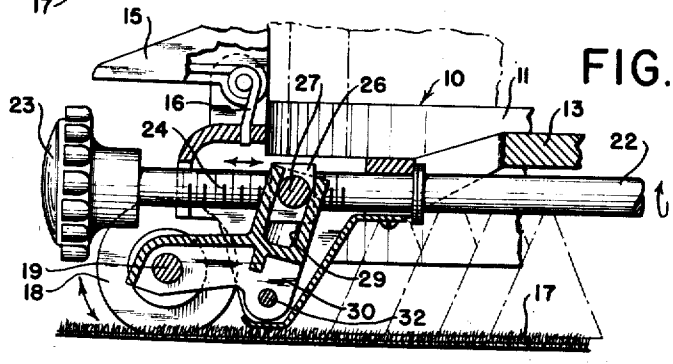


FIG. 3



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FLOOR POLISHER WITH ATTACHMENT FOR CLEANING RUGS

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3 Claims. (Cl. 15—49)

This invention relates generally to floor polishers, and more specifically to an attachment for a floor polishing machine which permits the use as a rug cleaner of a floor polisher of the type referred to in my copending patent application for a "Floor Machine" filed August 3, 1950, and bearing Serial Number 177,404, the patent having been issued on April 20, 1954, Patent No. 2,676,067.

A floor machine of the type mentioned has interchangeable rotating brushes, or buffing heads as the primary cleaning or polishing members. When the machine is in use these brushes or buffing heads are directly in contact with the surface to be cleaned and rotate in a plane parallel to that surface. Above them is housed the driving mechanism, the entire weight of the apparatus resting upon the brushes or buffing heads. Such an arrangement is perfectly satisfactory for the cleaning or polishing of a surface of the nature of linoleum or hardwood. The arrangement is even desirable with such a surface, for a more thorough job is done when a greater pressure is applied to the floor contacting parts.

The same apparatus could be applied to the cleaning of rugs with brushes used as the cleaning member. Necessarily, in order not to damage the rug fabric or nap, a softer brush would have to be used than would be used in the cleaning of floors. But regardless of the nature of the brush used, such an apparatus simply would not work in the cleaning of rugs if the full weight of the apparatus were to rest on the brushes. This would be so because the nap of the rug would catch the fibers of the brush, impeding rotation of the brushes, and this result would be aggravated with pressure on the brushes. Even if rotation did occur, grave damage to the rug might result.

The primary object of this invention, therefore, is to provide a removable attachment for a floor machine having cleaning brushes rotatable in a horizontal plane, which will itself carry the weight of the machine, relieving the cleaning brushes of the necessity of carrying the said weight. In this manner an additional use to make the floor machine even more versatile, becomes possible.

Since in the cleaning of a rug with an apparatus of the type mentioned it is necessary to move the cleaner over the surface of the rug, it is a further object to provide means in the attachment for a floor polishing machine whereby it is possible to freely move the entire assembly over the surface of the rug.

Another object is to make the members of the attachment which render it movable, of such nature that no damage to the rug will result in moving the cleaner about.

Still another object is to include in the attachment means for adjusting the spacing between the brushes of the supported floor machine and the rug. This adjustment is necessary because of the varying height and thickness of nap in different rugs.

A further object is to provide means whereby the attachment may in a very simple manner be attached to the cleaning apparatus, and with equal ease be removed.

A still further object of this invention is to put into the hands of the housewife a practical means by the use of which rugs may be cleaned in the home eliminating the inconvenience of sending rugs out to be cleaned, and making rug cleaning far more economical.

A final object is to provide an attachment for a cleaner of the type mentioned which is light, durable, and which may be made and sold at moderate cost.

How these and many other objects are to be implemented will become apparent through a consideration of the accompanying drawings wherein:

Fig. 1 is a plan view of the attachment

Fig. 2 is a section taken along line 2—2 of Fig. 1, and

Fig. 3 is a similar section to that shown in Fig. 2 demonstrating the operation of the spacing adjusting mechanism.

The attachment comprises a carrying member **10** having as part thereof two U-shaped portions **10***a* and **11**. The carrying member supports the floor machine on ledge **12** which forms a part of portions **10***a* and **11**, the ledge engaging a rim of the floor machine which is not shown. Additional support is also furnished by means of cross-member **13** beneath which shaft **22** passes.

In attaching the floor machine to the carrying member, the machine is placed on ledge **12**, with stationary catch **14**, which is immovably mounted upon the main carrying member, engaging the floor machine and holding the floor machine down. Before the floor machine is placed on ledge **12** and under catch **14**, pivotable latch **15** is manually depressed in the direction of the arrow in Fig. 2. When the machine is then placed in position on the adapter frame, latch **15**, acting under the motivation supplied by spring **16**, pivots into the position shown in dotted lines in Fig. 2, in which position it engages the floor machine and securely anchors it in the carrying member. Because latch **15** is freely pivotable in both directions when it is in engaging position with the floor machine, its anchoring action will persist when the spacing between the machine and the rug **16** is adjusted up or down by the means hereinafter to be described.

Rollers **18** are affixed to the attachment to provide the necessary mobility for the cleaning operation. Wide rollers are used in order that the weight carried by the attachment be distributed over a large surface to minimize any possible deleterious effect to the rug being cleaned. The rollers are carried on roller shafts **19** and **20**.

The height adjustment is made through rotation of shaft **22** which may be rotated through manipulation of knurled knob **23**. The shaft has two threaded portions **24** and **25**, one portion having a right hand thread, the other a left hand thread. Rider **26**, having two external pins **27** as a part thereof, has a threaded internal surface through which threaded portion **24** of shaft **22** passes, so that rotation of the shaft causes rider **26** to move along threaded portion **24**. Similarly a second rider **28** will move along threaded portion **25** of the shaft. The lateral motion of the riders is converted to a vertical motion for adjusting vertical spacing between the floor machine and the rug by engaging pins **27** in channels **29** provided for them in rockers **30** and **31**, as shown in Fig. 3. Roller shafts **19** and **20** pass through the rockers **30** and **31** which act as fixed points about which the rockers may pivot. The rocker members are further pivotally connected to the main carrying member by pins **32** and **33**. It may thus be seen that rotation of shaft **22** will, through the action of the riders **26** and **28** cause rotation of rockers **30** and **31** about the roller shafts **19** and **20**. The effect is to impart a vertical motion to the carrying member **10** which is transmitted thereto from the rockers through pins **32** and **33**. It will be remembered that threaded portions **24** and **25** of shaft **22** are oppositely threaded so that rockers **30** and **31** will act cooperatively to raise or lower

the main carrying member upon rotation of shaft 22. Fig. 3 illustrates the change in position of the component parts when the carrying member has been lowered from the position of Fig. 2.

While I have described a specific embodiment of my invention, it is apparent that modifications and alterations in the structure described may be made without departing from the spirit of my invention. For example, stationary catch 14 as well as latch 15 may be made pivotable so that both are capable of being swung out of the way when the floor machine is placed in carrying member 10.

I claim:

1. An attachment for a machine having cleaning means rotatable in a plane parallel to the rug to be cleaned, comprising a carrying member having an open portion capable of supporting said machine, the cleaning means of said machine extending through said open portion of said carrying member when so supported, whereby said cleaning means are adapted to operatively contact and treat the rug, means for releasably attaching said attachment to said machine, and means for adjusting the vertical spacing between said carrying member and said rug, said adjusting means comprising rockers disposed on opposite sides of said open portion of said carrying member, and pivotably pinned at pivot points to said carrying member, said rockers having channels therein, roller shafts upon which said rockers are also pivotably mounted, rollers mounted upon said roller shafts, internally threaded riders having pins integral therewith, said pins being engaged by said channels in said rockers for slidable movement within said channels, and a rotatable shaft having oppositely threaded surface portions, each of said portions passing through one of said riders, whereby upon lateral movement of said riders along said rotatable shaft upon rotation of said shaft and consequent slidable movement of said pins within said rocker channels pivoting of said rockers about said roller shafts occurs, with consequent vertical displacement of said pivot points at which said rockers are pivotably pinned to said carrying member.

2. An attachment as claimed in claim 1 wherein said means for releasably attaching said attachment to said machine comprises a plurality of hooks mounted on said carrying member for engaging said machine, at least one of said hooks being pivotable.

3. The combination for cleaning rugs comprising a machine having cleaning means rotatable in a plane parallel to the rug to be cleaned, and an attachment releasably attached thereto, said attachment comprising a carrying member having an open portion capable of supporting said machine, the cleaning means of said machine extending through said open portion of said carrying member when so supported, whereby said cleaning means are adapted to operatively contact and treat the rug, means for releasably attaching said attachment to said machine, and means for adjusting the vertical spacing between said carrying member and said rug, said adjusting means comprising rockers disposed on opposite sides of said open portion of said carrying member, and pivotably pinned at pivot points to said carrying member, said rockers having channels therein, roller shafts upon which said rockers are also pivotably mounted, rollers mounted upon said roller shafts, internally threaded riders having pins integral therewith, said pins being engaged by said channels in said rockers for slidable movement within said channels, and a rotatable shaft having oppositely threaded surface portions, each of said portions passing through one of the said riders, whereby upon lateral movement of said riders along said rotatable shaft upon rotation of said shaft and consequent slidable movement of said pins within said rocker channels pivoting of said rockers about said roller shafts occurs, with consequent vertical displacement of said pivot points at which said rockers are pivotably pinned to said carrying member.

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