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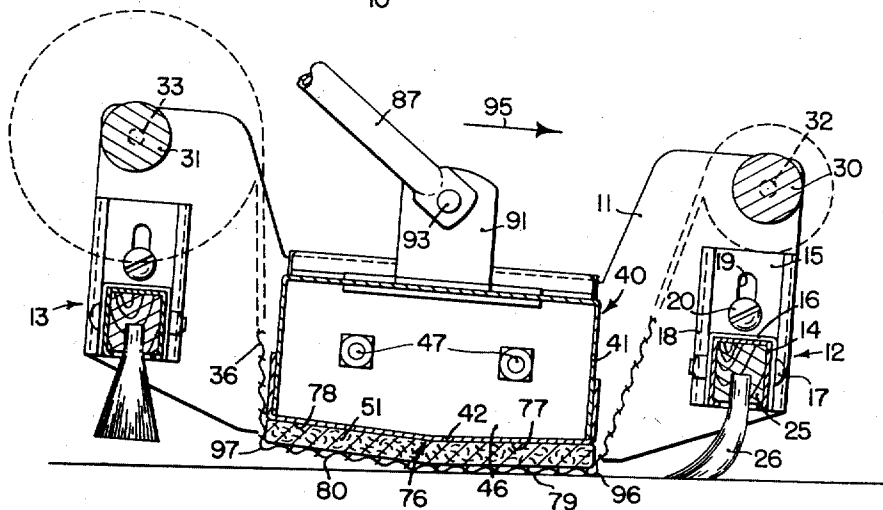
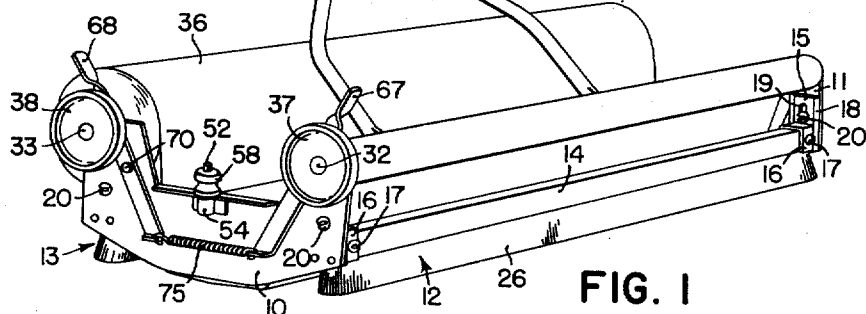
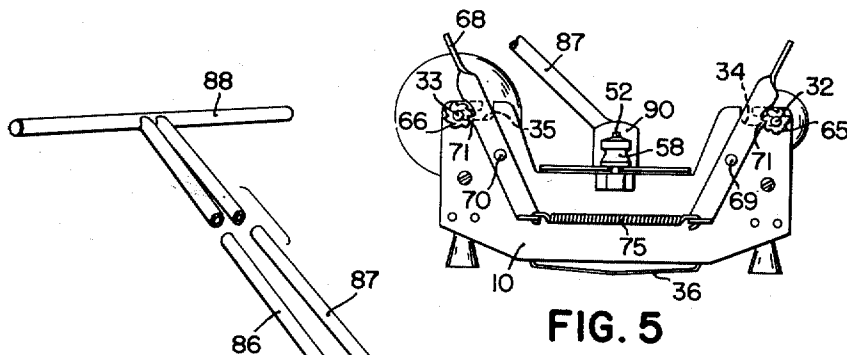
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2,601,537

COMBINATION FLOOR BRUSH AND POLISHER

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2 SHEETS—SHEET 1



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COMBINATION FLOOR BRUSH AND
POLISHER

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The present invention relates to floor cleaning devices and more particularly to a device for sweeping and polishing large floor areas, such as bowling alleys and ballroom floors. The principal object of this invention relates to the provision of a novel and improved floor cleaning device which is simple and inexpensive in construction, but efficient and durable in operation.

Another object has to do with the provision of a floor cleaning device which expedites the operation of cleaning large floor areas by sweeping or brushing the floor and polishing the latter all in one operation. In order to properly condition a ballroom or gymnasium floor, a brush alone is insufficient, for it is desirable to remove not only the scraps of paper and other refuse and tracked-in dirt, but also the fine dust and soot which would filter through a brush. A polishing cloth or paper, used alone, is likewise insufficient because the fabric or paper is quickly loaded or impregnated with coarser dirt, which appreciably impairs the efficiency of the device.

In accordance with the principles of the present invention, the cleaning device incorporates both a brush for gathering larger bits of refuse and coarser dirt and a polishing fabric behind the brush for wiping up the fine dust and soot.

A further object of this invention relates to the provision for facilitating changing the wiping surface frequently as it becomes dirt-laden. In the accomplishment of this object, the polishing element is provided in the form of a strip of fabric or paper wound on a pair of rollers, which are rotatable to wind the soiled portion on one of the rollers and to move a clean portion from the roll on the other roller to the wiping position.

A related object has to do with providing simple and efficient locking means for restraining the rollers from rotation during operation and thus to prevent the strip from loosening.

Another object relates to the provision of two brushes, one on each side of the polishing element thereby providing for similar efficient operation in relatively opposite directions, alternately. Heretofore it has been considered impracticable to reverse the direction of movement of a cleaning brush or polishing fabric for the reason that the leading edge or portion of the cleaning element picks up most of the dust; therefore, the dust is redeposited on the floor when the element is reversed and the formerly leading edge becomes the trailing edge. Therefore, it is a related object of this invention to

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provide for raising the trailing brush and the trailing edge of the polishing element away from contact with the ground in either direction of movement of the device. In the accomplishment of this object, the bottom surface is made convex in shape and the propelling handle is so connected to the device that it tilts or rocks toward the direction of movement, thus dropping the leading brush and raising the trailing brush.

These and other objects and advantages of this invention will be apparent to those skilled in the art after consideration of the following description, in which reference is had to the accompanying drawings, in which:

Figure 1 is a perspective view of a floor cleaning device embodying the principles of the present invention;

Figure 2 is a sectional elevational view, taken along a line 2-2 in Figure 3 and drawn to an enlarged scale;

Figure 3 is a top plan view, with the propelling handle removed, and drawn to a smaller scale;

Figure 4 is a sectional view taken along a line 4-4 in Figure 3; and

Figure 5 is an enlarged end elevational view with the roller handles removed.

Referring now to the drawings, the floor treating or cleaning device comprises a pair of end supports in the form of fore and aft extending vertical plates 10, 11 secured together in laterally spaced relation by means of a pair of fore and aft spaced floor treating or cleaning brushes 12, 13 to form a rigid frame. Each brush comprises a metal channel 14 secured rigidly to a pair of vertical end plates 15, one at each end of each brush. Each plate 15 is provided with a flange or collar 16 which is attached to the brush by a bolt 17. The plate 15 is slidable vertically in a channel member or track 18 fixed to the associated end support 10, 11. A vertical slot 19 in the plate 15 receives a screw 20, which threads into the channel 18 and support 11, thus providing for vertical adjustment of the brush to compensate for wear.

Each brush has a wooden back 25 supported within the metal channel 14 and a row of tufts or bristles 26 extending across the width of the machine and depending from the back 25 to sweep the floor, as will be evident.

A pair of rollers 30, 31 having shafts 32, 33 are disposed above and substantially parallel to the brushes 12, 13, respectively. The roller shafts are rotatably supported at opposite ends thereof, respectively, in the end supports 10, 11. To this end, the support 11 at one end is provided

with circular apertures to receive the shafts while the other end support 10 is provided with L-shaped slots extending down from the upper edge and outwardly, through which the other ends of the shafts 32, 33 can be dropped when installing the rollers in the device.

A strip of cleaning material 36 has its opposite ends wound on the rollers 30, 31, respectively. This material can be any which is suitable for wiping up dust and polishing the floor, preferably flannel, although other fabrics or soft paper can also be used. Each roller shaft is provided with a handle in the form of a wheel 37, 38 fixed thereto, for rotating the rollers to wind the fabric 36 from one roller to the other.

The fabric 36 is pressed against the floor by a presser member 40 in the form of a body or casing comprising an upper inverted channel 41 and a lower channel 42 having their flanges secured together to form a box. A pair of end walls 43, 44 are secured by bolts 47 to wood blocks 45, 46 set in the ends of the box. The end walls 43, 44 are extended above the upper channel 41 and have outwardly turned flanges 48, 49, respectively, provided with slots 50. The bottom of the member 40 is covered by a thick felt pad 51 cemented thereto.

The presser member is slidable downwardly between the end supports 10, 11 and between the rollers 30, 31 to bring the felt pad 51 down upon the portion of the fabric strip 36 between the rollers to form a yieldable backing for the cleaning strip. The flanges 48, 49 overlie the end support plates 10, 11, respectively, and the member 40 is secured in this position by clamping bolts 52, 53 which are pivoted on clips 54, 55 fixed to the supports 10, 11. The bolts are swingable about the pivots 56, 57 into the slots 50 and are provided with thumb nuts 58, 59 which screw down tightly against the flanges 48, 49.

The rollers 30, 31 are provided with ratchet wheels 65, 66 fixed to the shafts 32, 33, respectively, adjacent the hand wheels 37, 38 outside the end support 10. A pair of ratchet pawls 67, 68 are pivoted at 69, 70 to the support 10 and have teeth 71 which engage the ratchet wheels 65, 66 to prevent rotation of the rollers in a direction which would permit loosening of the fabric strip 36. The lower ends of the pawls are interconnected by a single coil spring 75 stressed in tension to hold both pawls in engagement with the ratchet wheels. The spring 75 also acts through the pawls to hold the roller shafts 32, 33 in the ends of the L-shaped slots 34, 35.

The bottom of the lower plate 42 of the presser member 40 is made convex in shape by bending it along the longitudinal center line to provide an apex indicated by reference numeral 76, thus forming two generally flat surfaces 77, 78 disposed at an obtuse angle to each other. The felt pad 51 and the fabric strip 36 take this same shape, thus providing front and rear cleaning faces 79, 80 which can contact the floor alternately but not simultaneously. The entire cleaning device rests upon one or the other of these surfaces and can be tilted or rocked fore and aft over the transverse apex 76 to bring one or the other surface into engagement with the floor.

As indicated in Figure 2, the bristles 26 of the brushes 12, 13 extend downwardly below the plane of the adjacent cleaning surface so that they are in floor-sweeping position when their adjacent cleaning face is in floor-polishing position, but they do not reach the floor when the

device is tilted to bring the opposite brush into sweeping position.

Force is exerted to move the device across the floor by means of a propelling handle comprising a pair of tubular metal legs 86, 87 joined by a transverse handle bar 88 and a short connecting bar 89, fixed as by welding. The legs diverge downwardly and are pivotally connected to the top of the presser member 40 by a pair of brackets 90, 91 rising from the top channel 41 and fixed thereto. The brackets have inwardly extending pivots 92, 93 which receive the legs 86, 87, the latter being suitably apertured and can be sprung together to engage the pivots.

When force is exerted through the handle to push the device forwardly in the direction of the arrow 95 (Figure 2) the device is first tilted forwardly to lower the leading brush 12 into sweeping position and to press the leading face 79 of the polishing strip against the floor. The larger bits of refuse and dirt are thus collected by the leading brush 12 while the surface 79 collects the fine dust and dirt, which will be largely concentrated at the leading edge 96 of the face 79. The device is thus slid across the entire length of the floor, then the direction of force can be reversed either by pulling the handle 88 or by swinging the handle about its pivots 92, 93 and pushing. In either case, the force is applied to the device at the axis of the pivots 92, 93 above the presser member 40, tilting the device to lower the brush 13 and polishing face 80 while raising the brush 26 and face 79 from the floor, whereupon the brush 13 becomes the leading brush and the edge 97 becomes the leading edge of the polishing surface.

When the fabric becomes dust-laden, a clean portion can be shifted under the pad 51 by raising the pawl 68 on the clean roll and turning the handle 37, thereby winding the soiled section on the other roll. After the entire strip has been used in this manner, the roll can be removed by raising the pawl 67 and sliding the shaft 32 out of the slot 34 in the support 10, then withdrawing the other end of the shaft from the aperture in the support 11. If the roll is of fabric it can be laundered, or discarded if it is of paper.

I do not intend my invention to be limited to the particular details shown and described herein, except as set forth in the following claims.

I claim:

1. In a floor cleaning device comprising a body member having a bottom surface serving as a presser plate and bent along a line extending transversely of the direction of travel of the device along the floor, said line being generally midway between the front and rear edges of said bottom surface providing two faces disposed at an obtuse angle to each other, a pair of supports mounted adjacent opposite ends of said member, respectively, a pair of rollers extending between said supports and journaled thereon in fore and aft spaced relation, a strip of cleaning material having its ends wound on said rollers, respectively, and extending beneath said bottom surface to wipe the floor when the device is moved, a handle pivotally mounted on said member above said bottom surface on an axis transverse to the direction of movement forwardly and rearwardly across the floor, thereby providing for rocking movement of said body member responsive to reciprocation of said handle to bring the leading face of said bottom surface into sliding contact with the floor in either direction of movement, and a pair of brushes carried by said body

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member adjacent said front and rear edges and rockable therewith, each one of said pair of brushes having a floor engaging portion positioned in the plane of that portion of cleaning material under the adjacent face of said presser plate but spaced above the floor out of contact therewith when the body is rocked to bring the portion of material under the opposite face of the presser plate into floor-engaging position, whereby in either direction of movement of said device, the brush in the leading position is automatically brought into floor-engagement to brush the floor ahead of the strip of floor cleaning material and the brush in trailing position is raised out of contact with the floor.

2. The device claimed in claim 1, including the further provision that said supports comprise a pair of plates detachably secured to said body and extending beyond the front and rear edges of the latter, said brushes each having a pair of end plates attached thereto and a pair of channel members secured to the inner sides of said support plates outwardly of said body member, said end plates being slidable vertically in said channel members and having means for securing them to said channel members in vertically adjusted position, and said rollers being journaled in said support plates above said brushes, respectively, to provide a compact assembly but spaced apart sufficiently to provide for lifting said body member therebetween after detaching the body member from said support plates.

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3. The device claimed in claim 2, including the further provision of a pair of ratchets mounted on said rollers, respectively, a pair of pawls pivoted on said support plates and engageable with said ratchets, and a single coil spring interconnecting said pawls and holding both of the pawls in engagement with said ratchets.

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