Aug. 7, 1962 J. BARTOS ETAL 3,047,897

FLOOR TREATING DEVICES

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Fig. 1

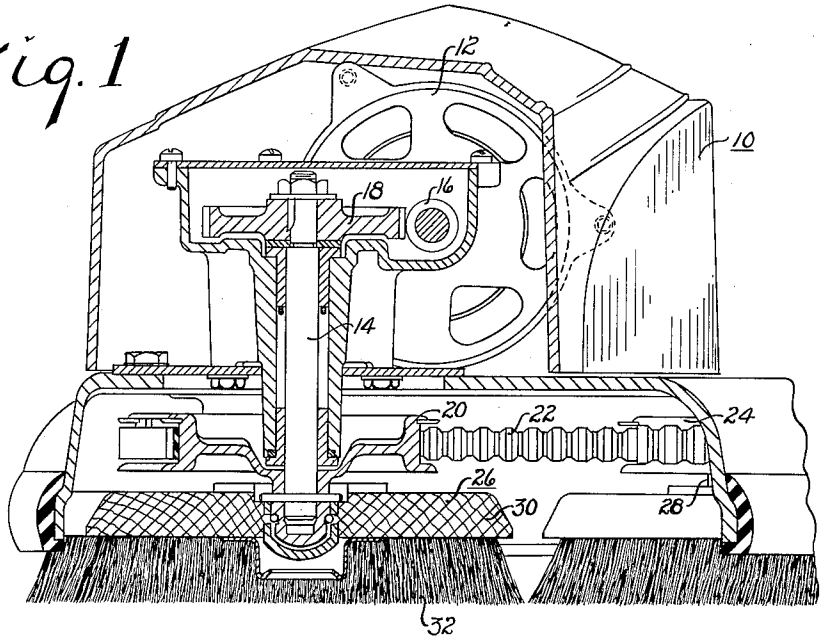


Fig. 2

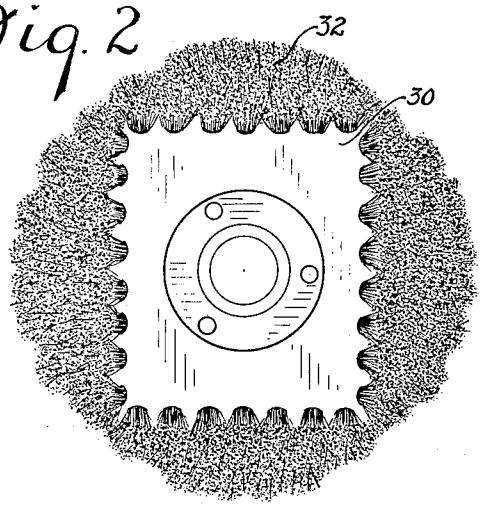


Fig. 3

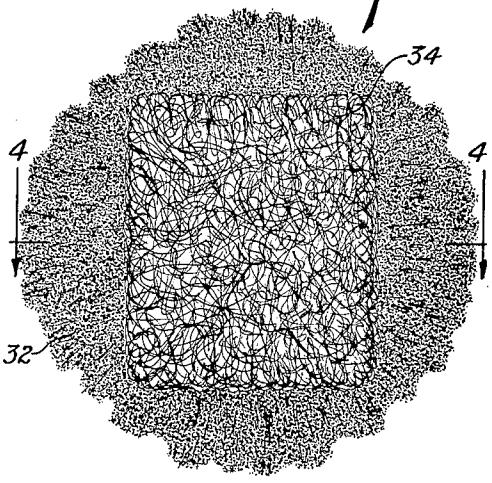
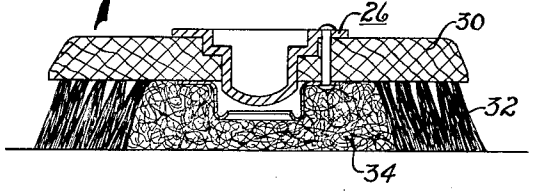


Fig. 4



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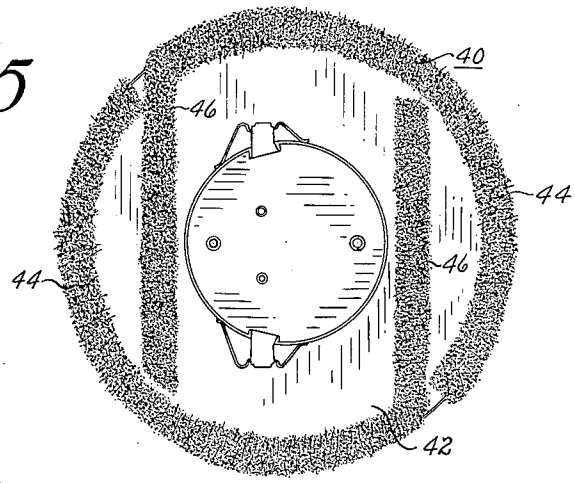
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Fig. 5



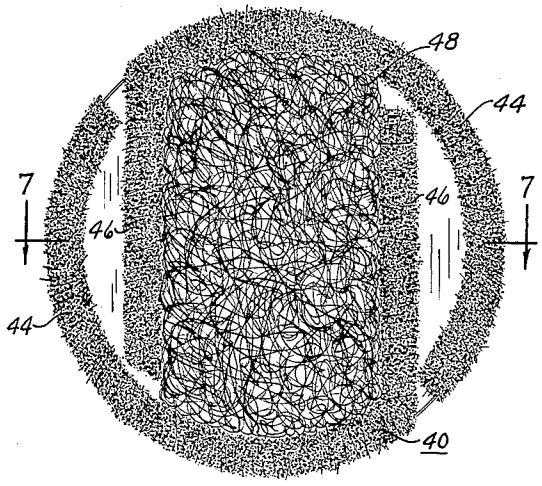


Fig. 6

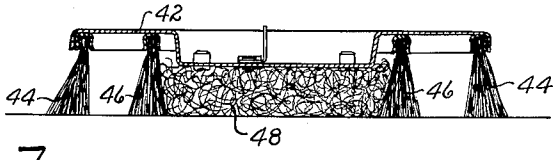


Fig. 7

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FLOOR TREATING DEVICES

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5 Claims. (Cl. 15—114)

Our invention relates to floor treating apparatus, commonly known as floor polishers.

In an apparatus of this type it is common to provide one or more rotating discs having suitable material for treating the surface of a floor. This material normally consists of brush bristles, either natural, synthetic or a mixture of the two, the disc rotating this material in frictional contact with the floor to apply and polish wax or the like. With certain types of floor surfaces it is desirable to use metallic wool, such as steel or bronze wool. This material is recommended for buffing vinyl tile floors without the use of any wax or similar material, and metallic wool also may be used with a cleaning and polishing wax, the wool first aiding in cleaning the surface and thereafter in buffing it. In addition, metallic wool may be employed for scrubbing with water and a detergent, in which case it is preferable to use bronze wool to avoid rust marks.

Heretofore, it has been the practice to provide a circular pad of metallic wool having about the same diameter as the brush disc. This pad is placed on the floor and the disc is then placed upon it. When the disc is rotated by the motor of the floor polisher it causes the wool pad to rotate. However, this has the disadvantage that centrifugal force tends to disintegrate the wool pad and to throw particles thereof outwardly. Also, if the thus frayed edges of the pad come in contact with a baseboard or the furniture leg, scratching and marring may result. Furthermore, in the case of a multi-brush polisher it is not only difficult to properly locate the several pads under the different brushes, but during operation it is most likely that the edges of the rotating pads will become entangled with each other, resulting in their further disintegration.

In accordance with our invention the discs are provided with brush bristles located near the peripheral edge only, the center of the disc being devoid of bristles. In the space thus provided a pad of metallic wool is located and consequently the bristles serve to restrain disintegration of the pad under the effect of centrifugal force and they also prevent contact between the pad and a baseboard or the like. Preferably, the pad receiving space in the center of the disc is non-circular in shape, such as rectangular, while the pad is of the same shape, thus assuring that the pad will be turned with the disc.

Further objects and advantages of our invention will be apparent from the following description considered in connection with the accompanying drawings on which:

FIG. 1 is a cross-sectional view of a floor and polisher having a plurality of discs;

FIG. 2 is a bottom view of one of the discs shown in FIG. 1;

FIG. 3 is a bottom view of the disc shown in FIG. 2, but with a pad of metallic wool in place;

FIG. 4 is a cross-sectional view taken on the line 4—4 of FIG. 3;

FIG. 5 is a bottom view of a different form of disc;

FIG. 6 is a bottom view of the disc shown in FIG. 5, but with a pad of metallic wool in place; and

FIG. 7 is a cross-sectional view taken on the line 7—7 of FIG. 6.

Referring more particularly to FIG. 1, reference character 10 designates generally an electric floor polisher. It includes an electric motor 12 which drives a vertical shaft 14 through a gear reduction comprising a worm 16 and a worm gear 18. Secured to the lower end of shaft 14 is a toothed pulley 20 which drives a belt 22 which in turn engages another toothed pulley 24.

Removably mounted on the lower end of shaft 14 is a surface treating disc 26, while a similar disc is mounted on a shaft 28 driven by the pulley 24. As is shown in FIG. 2, this disc includes a rigid back 30 from the face of which project tufts of brush bristles 32 secured in holes in the rigid back. These bristles are disposed in a zone adjacent to the peripheral edge of the disc. As is shown in FIG. 2, the outer boundary of this zone is the circular edge of the disc, while the inner boundary is non-circular and preferably rectangular.

A pad of metallic wool, such as steel or bronze wool 34 having the same shape as the space within the bristles 32 may be inserted into this space, as is shown in FIGS. 3 and 4. Preferably, the initial dimensions of the pad are slightly greater than those of the space, so that it is necessary to compress the pad somewhat when putting it in place. This assures that it will not fall out as the discs are being placed on the floor, inasmuch as the compressed pad expands against the bristles bounding the space. When first put in place, the steel wool will project beyond the ends of the bristles, but when placed on the floor and supporting the entire weight of the polisher 10, the metallic wool pad will be compressed, as appears in FIG. 4.

Operation of the motor 12 causes the discs 26 to rotate about the shafts 14 and 28, respectively, and consequently the lower surface of the pads 34 are caused to frictionally rotate in contact with the floor. As above stated, these pads may be used dry for the purpose of buffing vinyl tile floor covering, or they may be used with cleaning and polishing wax for the purpose of both cleaning and polishing hardwood floors or the like to a high lustre.

During operation the bristles 32 confine the edges of the pads and thus resist the centrifugal force which tends to spread the pads in a radial direction. Also, the bristles prevent contact between the edges of the pads and any vertical surface, such as baseboards, furniture legs or the like, and in addition the bristles assure that the edges of the different pads do not tangle with each other.

In the disc shown in FIGS. 5 through 7, the bristles 40 are in the form of strips, rather than individual tufts. These strips are mounted on a sheet metal back 42 which may be secured by a suitable coupling to the vertical shaft of a floor polisher. As shown, the disc consists of two strips, each having a semi-circular portion 44 and a straight secant portion 46 which extends from one end of the circular portion of that strip to an intermediate point of the circular portion of the other strip. This arrangement provides a space in the center of the disc which is substantially rectangular, but has arcuate ends.

As is shown in FIGS. 6 and 7, a metallic wool pad 48 may be inserted in this space in the same manner as described in connection with the first embodiment, and may be used in exactly the same manner, the bristles surrounding the pad serving to prevent disintegrating by centrifugal force and protecting vertical surfaces from contact with the edges of the pad.

While we have shown and described two more or less specific embodiments of our invention, this has been done for purposes of illustration only and the scope thereof is not to be limited thereby, but is to be determined from the appended claims.

What we claim is:

1. In a floor treating machine, a disc, means for imparting rotary motion to said disc, brush bristles extend-

ing outwardly from a face of said disc and disposed in a zone the outer boundary of which is adjacent to the periphery of said disc and the inner boundary of which is non-circular and spaced from the center of the disc, and a pad of metallic wool disposed in the non-circular space bounded by said bristles and not extending beyond the ends of said bristles when the machine is in operative position on the floor or the like.

2. In a floor treating machine, a circular disc, means for imparting rotary motion to said disc, brush bristles extending outwardly from a face of said disc and disposed in a zone having an outer circular boundary adjacent to the periphery of said circular disc and an inner non-circular boundary spaced from the center of the disc, and a pad of metallic wool disposed in the non-circular space bounded by said bristles and not extending beyond the ends of said bristles when the machine is in operative position on the floor or the like.

3. In a floor treating machine, a circular disc, means for imparting rotary motion to said disc, brush bristles in strip form secured to a face of said disc and extending outwardly therefrom, said bristles being disposed in the form of a circle adjacent to the periphery of said disc and in the form of a plurality of secants to said circle, and a pad of metallic wool disposed in the non-circular space bounded in part at least by said secants and not extending beyond the ends of said bristles when the machine is in operative position on the floor or the like.

4. In a floor treating machine, a circular disc, means for imparting rotary motion to said disc, two continuous strips of brush bristles secured to a face of said disc and extending outwardly therefrom, each strip having a semi-

circular portion disposed adjacent to the periphery of said disc and a secant portion extending from one end of the circular portion to an intermediate point of the circular portion of the other strip, and a pad of metallic wool disposed in the non-circular space bounded in part at least by the two secants and not extending beyond the ends of said bristles when the machine is in operative position on the floor or the like.

5. In a floor treating machine, a disc, means for imparting rotary motion to said disc, brush bristles extending outwardly from a face of said disc and disposed in a zone the outer boundary of which is adjacent to the periphery of said disc and the inner boundary of which is non-circular and space from the center of the disc, and a pad of metallic wool having dimensions slightly greater than those of the non-circular space bounded by said bristles, said pad being compressed to fit within said space and being retained therein by expansion against said bristles and not extending beyond the ends of said bristles when the machine is in operative position on the floor or the like.

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