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G. E. KENT ET AL

1,966,299

SANDING DEVICE

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Fig. 1.

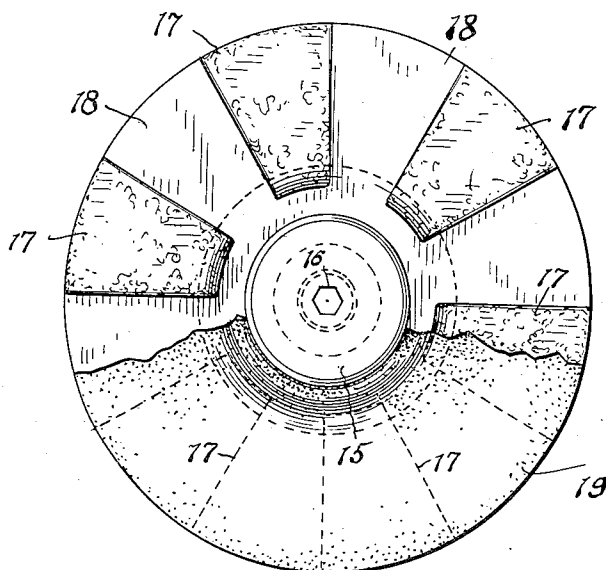


Fig. 2.

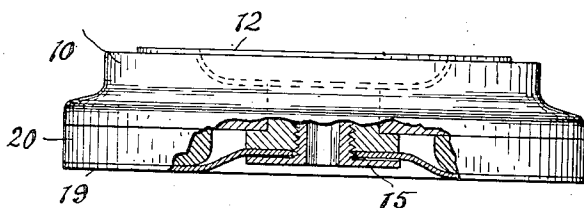
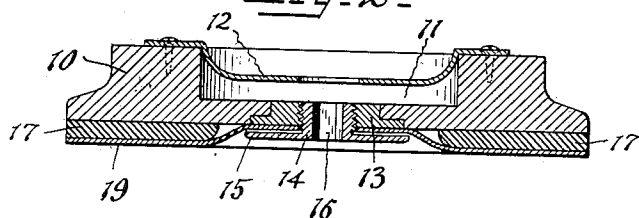


Fig. 3.

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UNITED STATES PATENT OFFICE

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SANDING DEVICE

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3 Claims. (Cl. 51—197)

This invention relates to sanding devices and more especially those adapted for use in connection with floor machines, such as that illustrated in our Patent No. 1,847,323, granted March 1, 1932.

It is one of the objects of the invention to provide a sanding device that will be exceptionally efficient in renovating badly worn, warped and uneven floors.

10 A further object of the invention is to provide a device that is capable of removing the finish and dirt from floors in which the boards have become warped and the joints between the boards form ridges which have prevented prior sanding
15 devices from reaching the hollows between the joints except by removing the ridges, which sooner or later exposes the matching between the boards of the floor.

20 A further object of the invention is to provide a device that will be capable of using sheets of sand paper in such a way that the entire usable abrading surface thereof will be brought into action.

25 Other objects of the invention and the features of novelty will be apparent from the following description, taken in connection with the accompanying sheet of drawings, in which

30 Figure 1 is a bottom plan view of a sanding device embodying our invention, a fragment of a sheet of abrading material being shown in position thereon;

Fig. 2 is a central transverse section thereof; and

Fig. 3 is a side elevation of a modification.

35 Referring to the drawing, 10 indicates a disk of suitable material, such as ply wood, having a recess 11 in its upper side to receive the attaching member 12 by which the device may be attached to the driving shaft of a floor machine such
40 as that illustrated in our prior Patent No. 1,847,323. A metal bushing 13 is secured at the center of the lower side of the disk 10 and is internally threaded to receive the screw 14 having a relatively large head 15 and a hexagonal recess 16, the latter being for the purpose of receiving a wrench whereby the screw may be turned
45 in the bushing 13. Soft pads 17, preferably of sponge rubber, are secured to the lower face of the disk 10 in a circular series, as shown in Fig. 1, with spaces 18 therebetween. These pads are
50 preferably about $\frac{1}{2}$ inch to $\frac{5}{8}$ inch in thickness.

55 A sheet of abrading material 19 is arranged against the underside of the pads 17, so as to cover the same and also the spaces 18, and has a central opening through which the screw 14 projects, as

shown in Fig. 2. The central portion of the sheet 19 is drawn into the space between the inner ends of the pads 17, by means of the head 15 of the screw 14, as clearly shown in Fig. 2, and, while the sheet 19 may be tightly clamped, we preferably avoid clamping it between the head 15 and the bushing 13 so as to leave the sheet free to slowly rotate or creep when the device is in use. By spacing the pads 17, the entire weight is concentrated on those portions of the sheet 19 that
60 are engaged by the pads and this results in a more effective sanding action than when the weight is distributed over a large area of the sheet 19. The spaces 18 also permit the sheet 19 to be forced upwardly by the ridges in the floor so that
70 the pads 17 may force the working areas of the sheet 19 into the hollows or depressions in the floor, with the result that the device will efficiently remove dirt or an old finish from the hollows or depressions in a badly worn or warped floor without
75 cutting down the ridges to form a smooth and even floor, as has been necessary with prior sanding devices. Floors are commonly made of relatively thin strips with tongue and groove joints and when these strips become warped it is frequently impossible to cut down the ridges sufficiently to make a smooth even surface without exposing the tongues and grooves and, therefore, in
80 refinishing such floors it is important to remove the dirt and old finish without materially cutting down the ridges.

By making the pads 17 of relatively soft material, such as sponge rubber, the pressure of the floor machine on the sanding device causes these pads to conform in shape to the surface
90 and, of course, the sheet of abrading material will also be permitted to conform to the surface with which it is in contact. Another advantage in having the spaces 18 between the pads is that they permit the debris to work out from under
95 the sheet 19 instead of filling the surface of the sheet and thereby reducing its effectiveness.

When the device is in use only those portions of the sheet of abrading material that underlie the pads 17, are actively working and the portions that underlie the spaces 18 would, if the sheet 19 were not permitted to rotate, not be used. However, by allowing the sheet 19 to gradually creep around, the portions that were initially under the spaces 18 will eventually move
100 around under the pads 17 so that the abrading surface of the sheet 19 will be uniformly worn in service and thus the abrading material will be efficiently utilized in the operation of the device.

Some of the objects of our invention may be 110

realized by the device illustrated in Fig. 3, in which the disk 10, is faced with a relatively thick annulus 20 of soft material such as sponge rubber. For best results this annulus should be one 5 inch or more in thickness so that in operation it will be capable of conforming to irregularities in the surface being operated upon and thus permit the sheet 19 to also conform to such surface.

While we have illustrated and described what 10 we now consider to be the preferred construction of our invention, it will be understood that various changes may be made in the details without departing from the spirit of the invention as defined in the appended claims.

15 Having thus described our invention, what we claim is:

1. A device of the class described comprising a disk having a plurality of pads on one side arranged in a circular series with spaces between 20 the pads, and means for securing a sheet of abrading material to said disk so as to cover said pads and the spaces therebetween, said securing means constituting a pivot on which said sheet is adapted to turn when the device is in 25 use.

2. A device of the class described comprising a disk having a plurality of relatively resilient pads secured on one side and so arranged as to pro-

vide a central cavity and relatively wide spaces between the adjacent sides of the pads, a sheet of abrading material having a flat annular portion loosely covering said pads and said spaces 80 so as to provide a working face consisting of a circular series of alternately arranged supported and unsupported portions, and a screw centrally arranged in said cavity within the plane of the outer faces of said pads and having a head adapted to draw the central portion of said sheet into 85 said cavity and thereby retain said sheet in position.

3. A device of the class described comprising a disk having a plurality of relatively resilient pads secured on one side and so arranged as to provide 90 a central cavity and spaces between the adjacent sides of the pads, a sheet of abrading material arranged on said pads and covering said spaces, and a screw centrally arranged in said cavity within the plane of the outer faces of said pads 95 and having a head adapted to draw the central portion of said sheet into said cavity and thereby retain said sheet in position, said sheet being loosely held by said screw so as to be rotatable thereon when the device is in use. 100

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