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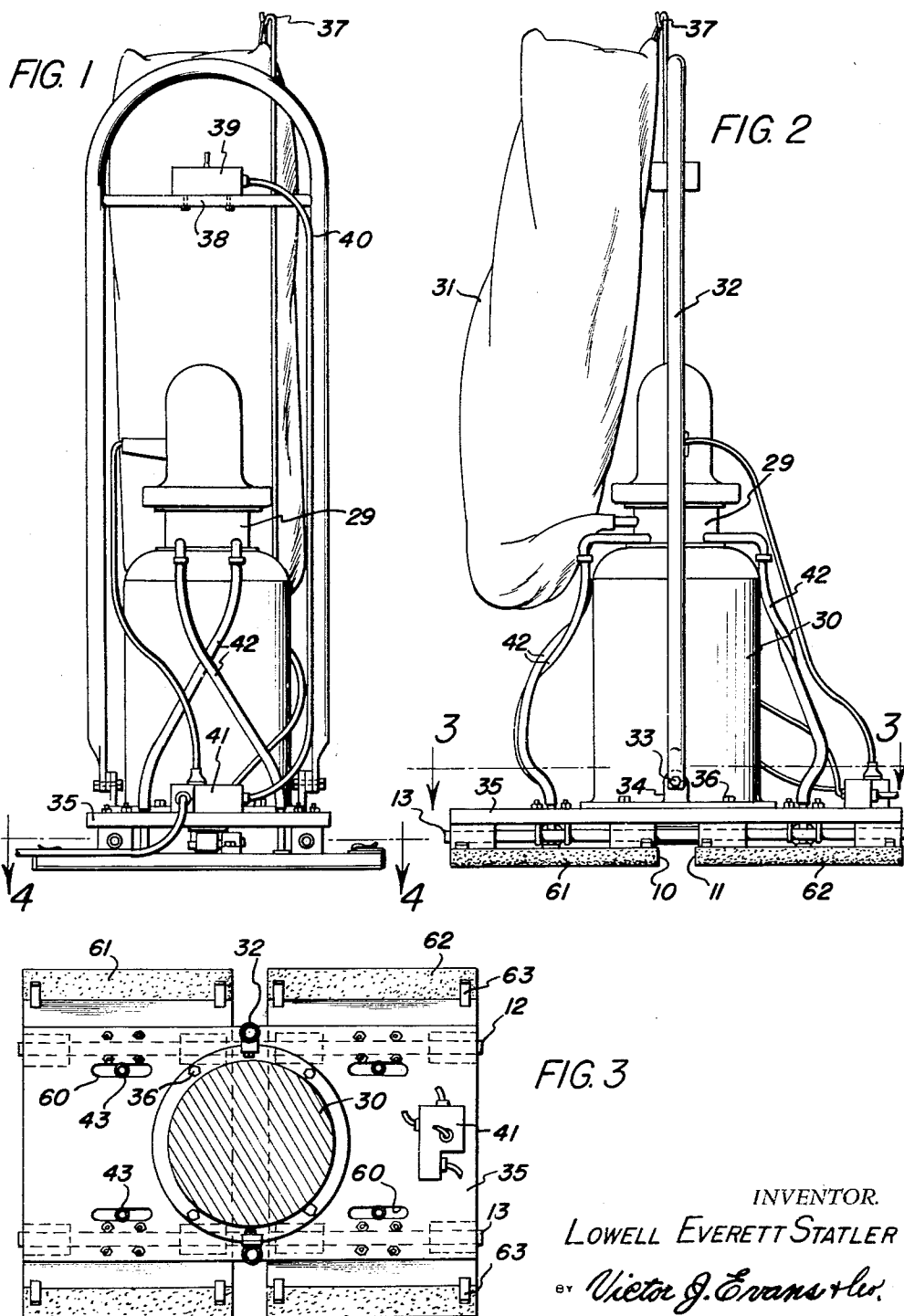
L. E. STATLER

2,956,379

FLOOR SANDER

Filed July 3, 1958

2 Sheets-Sheet 1



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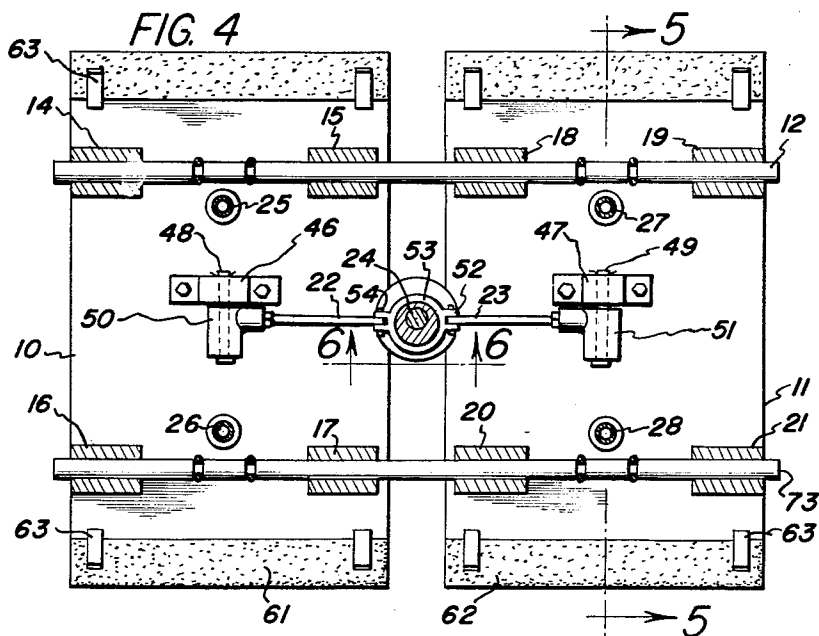
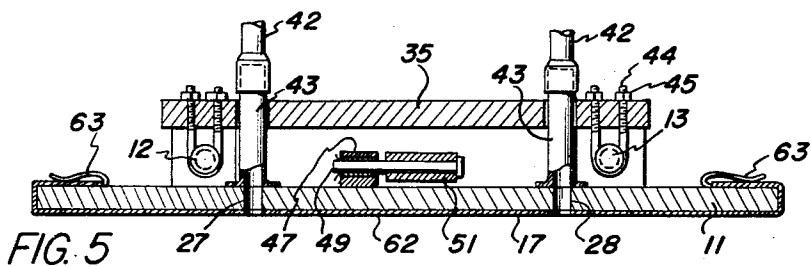
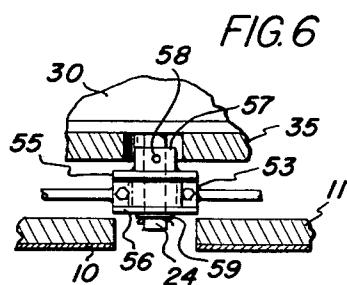
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FLOOR SANDER

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8 Claims. (Cl. 51—175)

This invention relates to floor sanders particularly of the reciprocating pad type wherein a plurality of rectangular-shaped pads having sandpaper on the faces are slidably mounted on spaced parallel rods and reciprocated by a motor driven vertically disposed shaft having eccentrics thereon and wherein air is drawn by suction through openings in intermediate parts of the pads and discharged into a dust collecting bag, similar to the bag of a vacuum cleaner.

The purpose of this invention is to provide a floor sander in which the sanding elements are cooled continuously by air drawn by vacuum across the abrading face and wherein the air not only cools the cutting faces of the sanding elements but also draws all dust and the like from the pads obviating the escape of dust into an enclosure in which the machine is operating.

Conventional sanders used for floors and other purposes are objectionable because dust escapes into the atmosphere making it necessary to use a dust mask and furthermore the fine particles of wood, varnish and the like clog up the abrading elements forming a mat and, consequently, the efficiency of such devices is comparatively low. With this thought in mind this invention contemplates a pair of reciprocating sandpaper pads wherein the abrading elements are maintained in a clean condition continuously by air being drawn through the abrading elements and the air passing through the elements holds the operating temperature to a low degree thereby insuring efficient operation of the device.

The object of this invention is, therefore, to provide a sanding machine in which all dust is drawn into a dust collecting bag.

Another object of the invention is to provide a sanding machine in which the temperature remains comparatively low continuously.

Another important object of the invention is to provide a floor sanding machine having a plurality of reciprocating pads in which the pads are actuated by a common motor operating through a vertically disposed shaft.

A further object of the invention is to provide a floor sanding machine having sandpaper on flat pads in which the sandpaper or other abrading material is readily removed and replaced.

A still further object of the invention is to provide a sanding machine that operates at a cool temperature and in which all dust is drawn into a dust collecting bag in which the machine is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies a pair of flat rectangular-shaped pads slidably mounted on parallel reciprocating rods having sheets of sandpaper retained on under surfaces thereof by spring clips, a frame extended upwardly from the pads, a motor mounted on the frame and operatively connected to the pads through a vertically disposed shaft with eccentrics on the lower end, the eccentrics being connected to the pads, a vacuum pump mounted in combination with the motor and connected by tubes to inter-

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mediate portions of the pads, and a dust collecting bag carried by an upwardly extended frame positioned on the pads.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings, wherein:

Figure 1 is an end elevational view illustrating the improved sanding machine.

Figure 2 is a front elevational view of the machine.

Figure 3 is a sectional plan taken on line 3—3 of Figure 2 looking downwardly upon upper surfaces of the pads.

Figure 4 is a sectional plan taken on line 4—4 of Figure 1 also showing the construction and mounting of the pads and in which the parts are shown on an enlarged scale.

Figure 5 is a cross section through one of the pads taken on line 5—5 of Figure 4 illustrating the mounting of the elements thereof, and also with the parts shown on an enlarged scale.

Figure 6 is a section taken on line 6—6 of Figure 4 illustrating the eccentric mountings or connections of the pads to the motor shaft.

Referring now to the drawings wherein like reference characters denote corresponding parts the improved floor sander of this invention includes a pair of rectangular-shaped pads 10 and 11 slidably mounted on spaced parallel rods 12 and 13 with bearings 14 and 15 of the pad 10 on the shaft 12 at one end of the pad, bearings 16 and 17 on the rod 13 at the opposite end of the pad 10, bearings 18 and 19 on the rod 12 and positioned at one end of the pad 11 and bearings 20 and 21 on the rod 13 at the opposite end of the pad 11, eccentric rods 22 and 23 connecting the pads to an eccentric on a vertically disposed motor shaft 24, openings 25 and 26 in the pad 10 and 27 and 28 in the pad 11 for connecting intermediate portions of the pads to a vacuum pump 29, a motor 30 for actuating the pump 29 and shaft 24, and a dust collecting bag 31 supported by an upwardly disposed inverted U-shaped frame 32.

The lower ends of the frame 32 are secured by bolts 33 to bearings 34 on a platform 35 on which the motor 30 is mounted by bolts 36 and the dust bag 31 is suspended by a hook 37 extended from the upper end of the frame. The upper part of the frame is provided with a cross bar 38 upon which a control switch 39 is mounted and the switch 39 is connected by a cable 40 to a control box 41 on the platform 35.

The vacuum pump 29 is connected by tubes 42 to the openings 25, 26, 27, 28 in the pads and as shown in Figure 5. The tubes 42 are positioned on upper ends of nipples 43 that extend upwardly from the openings through the pads.

The rods 12 and 13 are connected by U-bolts 44 to the platform 35 and the positions of the rods are adjusted by nuts 45 on the arms of the U-bolts.

The pads 10 and 11 are provided with bearings 46 and 47 in which pins 48 and 49, respectively are positioned and the pins extend through hubs 50 and 51 on the ends of the eccentric rods 22 and 23. The inner ends of the rods 22 and 23 are pivotally connected to ears 52 on a ring 53 on the shaft 24 by bolts 54 and the ring 53 is positioned between flanges 55 and 56 on the lower end of the motor shaft 24, as shown in Fig. 6. A hub 57 of the flange 55 is secured to the shaft 24 by a pin 58 and the flange 56 is secured in position on the lower end of the shaft by a fastener, such as a cotter pin 59.

The nipples 43 of the vacuum connections 42 extend through slots 60 in the platform 35 whereby the nipples are free to reciprocate with the pads as the pads slide on the rods 12 and 13.

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The lower surfaces of the pads 10 and 11 are covered with sandpaper, as indicated by the numerals 61 and 62 and the sandpaper is retained in position on the pads by spring clips 63.

With the parts assembled as illustrated and described the machine is positioned on a floor with the parts positioned as shown in Figures 1 and 2 and upon completing a circuit to the motor the pads 10 and 11 reciprocate on the rods 12 and 13 with the abrading surfaces of the sandpaper working on the surface of the floor. In this operation the vacuum connections draw air through the nipples 43 in the openings in the intermediate parts of the pads whereby air at room temperature is drawn across the surfaces of the pads at a comparatively rapid velocity and this air maintains the abrading elements at room temperature preventing the elements heating in the grinding operation. Furthermore, the rapid velocity of the air being drawn through the abrading elements removes all dust and other loose particles, carrying the particles from the grinding surfaces to the dust bag.

By this means a clean grinding surface is provided continuously. All dust is drawn through the machine and the grinding elements operate at a cool or comparatively low temperature.

It will be understood that modifications, within the scope of the appended claims, may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

1. A sanding machine comprising a platform, a pair of pads having abrasive lower surfaces, means for mounting the pads for reciprocation beneath the platform, means for reciprocating the pads, the pads being provided with openings extending from top to bottom through intermediate parts thereof and the platform being provided with openings registering with the openings in the pads when the pads are reciprocated, and means for drawing air from the bottom of the pads through said openings.

2. A sanding machine in accordance with claim 1, in which the means for mounting the pads includes a plurality of spaced parallel rods mounted beneath the platform with the pads slidably mounted on the rods.

3. A sanding machine in accordance with claim 1, in which the openings in the platform are in the form of slots elongated in the direction of movement of the pads when the pads are reciprocated.

4. A sanding machine in accordance with claim 1, in which the openings in the platform are in the form of slots elongated in the direction of movement of the pads when the pads are reciprocated, and in which the means for drawing air through said openings includes upwardly

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extending nipples mounted on the top surfaces of the pads over the openings therethrough, the nipples extending upward through the slots in the platform, a vacuum pump having an inlet, and flexible conduits connecting the nipples to the inlet of the pump.

5. A sanding machine according to claim 1, in which the means for reciprocating the pads includes a motor mounted on the platform, a shaft connected to the motor and extending through the platform, eccentric cam means mounted on the shaft below the platform, and eccentric rod means connecting the cam means to the pads.

6. A floor sander comprising a horizontally disposed platform, spaced parallel guide rods mounted below the platform and spaced therefrom, a pair of horizontally spaced rectangular pads, bearing blocks secured to the top surfaces of the pads and slidably mounted on the guide rods for aligning the pads with their lower surfaces in a given plane, an abrasive sheet detachably mounted on the lower surface of each pad, the pads and abrasive sheets having mutually registering openings extending vertically through intermediate portions thereof, the platform having elongated slots registering with the openings in the pads when the latter are reciprocated, a vacuum pump mounted on the platform and having an inlet and an outlet, conduit means connecting the openings in the pads to the inlet of the pump, a dust collecting bag supported on the platform and connected to the outlet of the pump, a motor mounted on the platform for driving the pump, and means driven by the motor for reciprocating the pads on their guide rods.

7. Apparatus according to claim 6 that also includes upwardly extending nipples mounted over the openings on the top surfaces of the pads and extending through the slots in the platform with the conduit means connected to the upper ends of said nipples.

8. Apparatus according to claim 6, in which the means for reciprocating the pads includes a shaft extending through the platform, cam means mounted on the shaft below the platform and angularly displaceable eccentric driving rods connecting the cam means to the pads.

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