

June 25, 1957

F. W. MOORE
ORBITAL SANDER

2,796,704

Filed Nov. 15, 1951

2 Sheets-Sheet 1

Fig. 1.

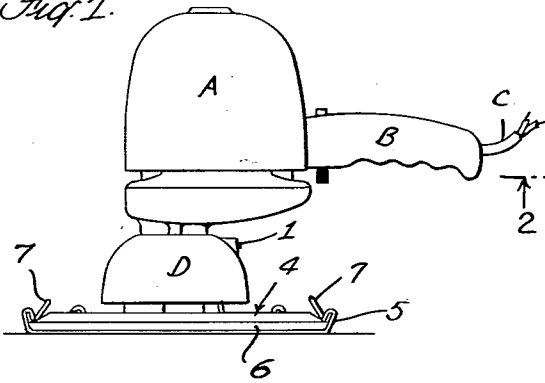


Fig. 3.

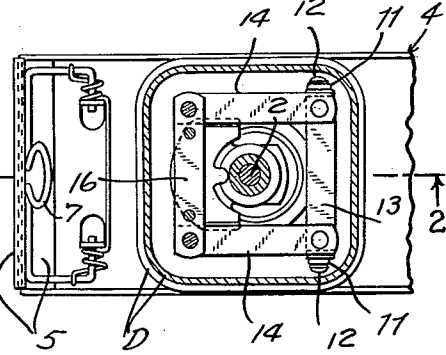
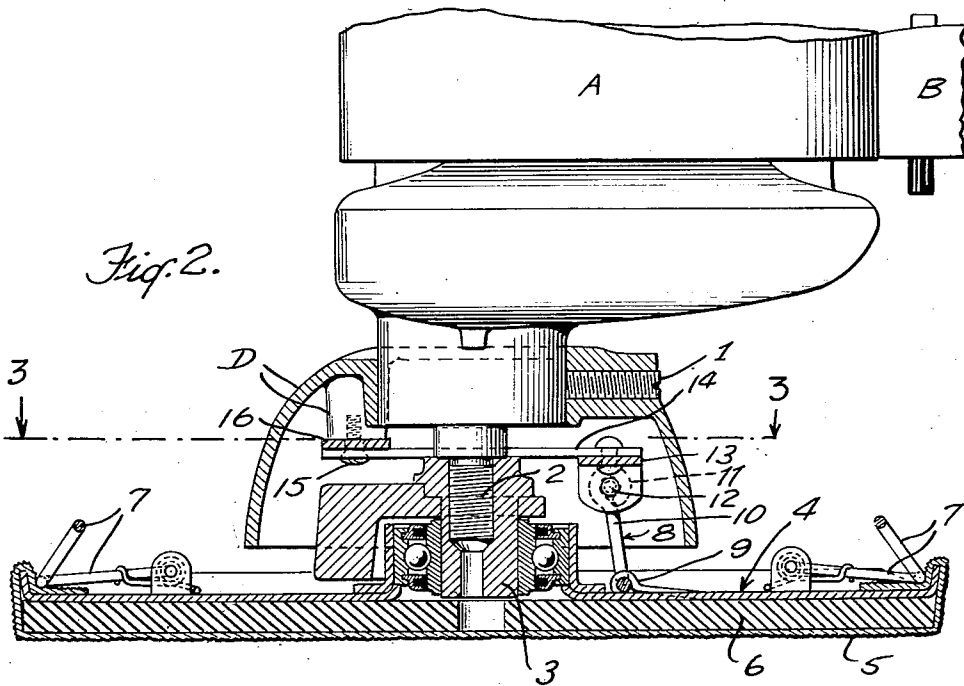


Fig. 2.



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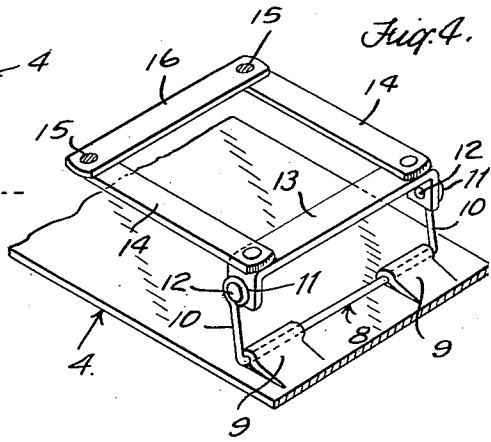
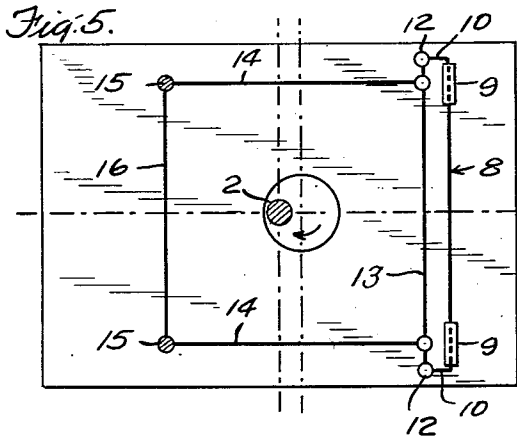
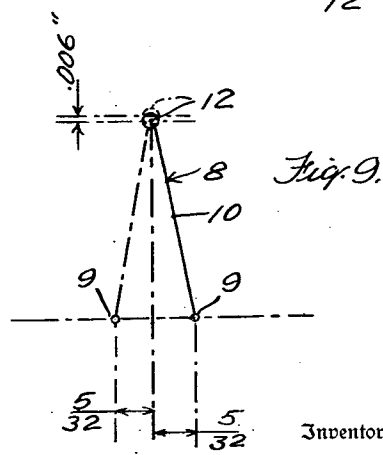
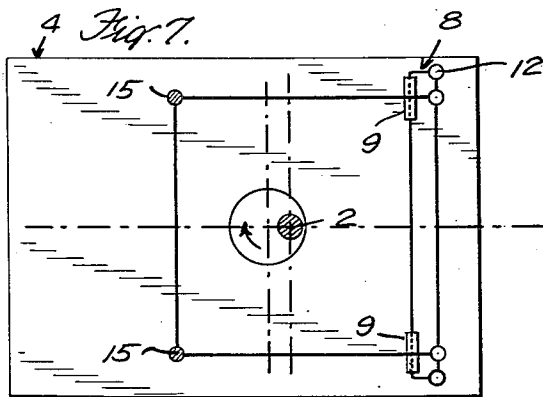
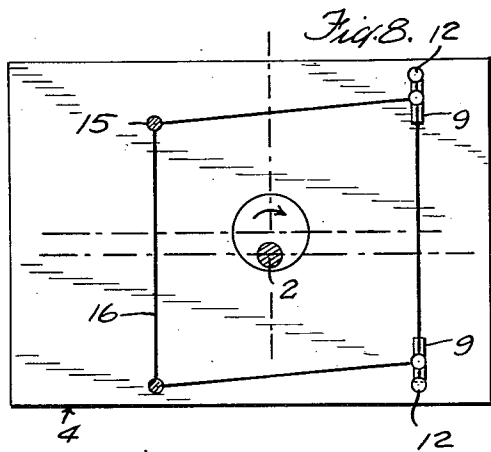
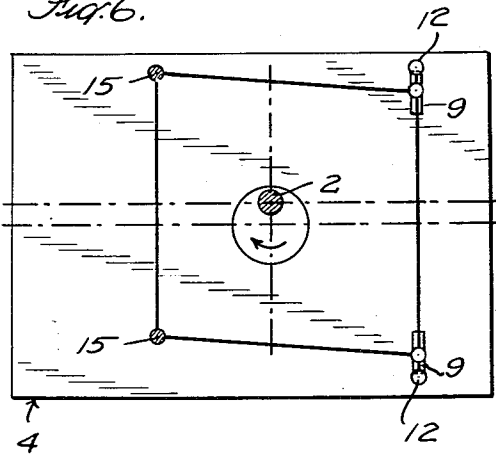


Fig. 6.



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2,796,704

ORBITAL SANDER

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Application November 15, 1951, Serial No. 256,500

2 Claims. (Cl. 51-170)

This invention relates to sanders.

An object is to provide a sander in which the sander block is driven by an eccentric, with the provision of a connection between the sander block and a fixed point on a power source whereby the movement of the block is modified to an orbital movement which markedly increases the efficiency of the operation upon the work.

A further object is the provision of a sander having a linkage of simple construction without the use of resilient members of rubber or the like, to support the sander block in its orbital operation, which by reducing the amplitude of its movement to a practical minimum, will substantially reduce wear and make for long trouble-free operation.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combinations of elements and arrangement of parts which will be exemplified in the constructions hereinafter set forth and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawings, in which:

Figure 1 is a schematic view on a reduced scale showing the sander, its hand grip and the power lead.

Figure 2 is an enlarged view showing the connection from the power motor to the sander block in section taken on the line 2-2 of Fig. 3.

Figure 3 is a section on a reduced scale on the lines 3-3 of Figure 2 looking in the direction of the arrows.

Figure 4 is a fragmentary isometric detail of the connection between the sander block and the power frame for imparting the orbital movement to the sander block.

Figure 5 shows schematically on an exaggerated scale the sander block in one position and its connected linkage in the corresponding position.

Figure 6 shows a position in which the eccentric driven by the power has moved through an angle of 90 degrees in a clockwise direction and the sander block has moved through an arc which has brought it to the position shown.

Figure 7 shows the position of the parts, as the eccentric has moved on a further 90 degrees.

Figure 8 shows the position as the eccentric has moved through a further angle of 90 degrees and with the completion of the cycle of the eccentric shown in Figure 5 referred to above.

Figure 9 illustrates the extent of movement of the various parts shown in Figures 5 to 8 and graphically shows the negligible vertical movement of the sander block displacement.

The sander is driven by a power motor and the illustration shows the frame of an electric power motor, A, having a hand grip, B, and power cable, C. Carried by the motor frame A, is a depending hood, D, connected to the motor frame, A, by a set screw pin 1. A shaft, 2,

driven by the power motor is screwed into an eccentric, 3, which is mounted, as by the anti-friction ball connection shown, in the sander block 4 the outer race of the bearing assembly shown is rigidly secured to the sander block 4 and the inner race of this assembly is rigidly secured to the eccentric 3. On the sander block the sander strip 5 is mounted with an interposed sponge section 6. Spring pressed pivoted levers 7 are shown for holding the sander strip in place, and are provided at their extreme ends with hand grips for hand operation to relieve the sander strip for replacement.

While in this instance the operating material is shown as a sander strip this may be replaced by some other polishing or buffing material or other material may be carried directly by the sander block or the sponge section.

A U-shaped rod 8 is pivotally mounted upon the sander block 4. As shown it passes through sleeves 9-9 carried by the block. This rod, which may be in the form of a relatively small wire, has substantially equal arms 10 extending upwardly at each end terminating in eyes 11 at their upper ends through which pass pins 12 so that there is a pivotal connection between arms 10 and the downturned ends of bar 13. Bar 13 is pivotally connected to parallel bars 14, and bars 14 are pivotally mounted on screw pins 15 which are secured to the hood D. A further bar 16 is shown connecting the two screw pins 15 but this is not essential.

By the construction shown, the motion of the sander block is converted into an orbital motion of which four 90 degree positions are shown in Figures 5 to 8. This results in much more efficient sanding of the work and limits gouging, or other marring of the work.

The operation of the machine will be largely obvious from the description already given. When power is supplied to the motor, the operator grasping the handle B can apply the machine as desired to the work with the result in orbital motion illustrated. Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which as a matter of language might be said to fall therebetween.

I claim:

1. In a sanding machine in combination a sander block carrying a sanding material, a frame, a power driving means carried by said frame, an eccentric driven by said power means and connected to actuate said sander block, a sleeve mounted upon said block, a U-shaped rod having its base passing through said sleeve whereby its arms are free for swinging movement with relation to the block, a rigid link spaced away from and extending across said block near one of its ends, the outer end of one arm of the rod being pivotally connected to one end of said link forming a junction therewith and the outer end of the other arm being likewise connected to the other end of said link forming a second junction, and parallel rigid members having the forward end of one of them pivotally connected to one junction between said arm and link and the forward end of the other of them pivotally connected to the other junction, and the other ends of the parallel members being pivotally connected to the frame.

2. In a sanding machine in combination, a sander block carrying a sanding material, a frame, a power driving means carried by said frame, an eccentric driven by said power means and connected to actuate said

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sander block, a rod mounted upon said block to gyrate therewith, but free for rotatable movement with relation thereto, an arm at each end of said rod, a member extending transversely of said block, said arms being pivotally connected with said member, and parallel members pivoted to fixed points on the frame and to the first member, substantially as shown and described.

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