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HAND-OPERATED ELECTRIC POWERED DRESSER

Filed Aug. 14, 1945

3 Sheets-Sheet 1

Fig. 1.

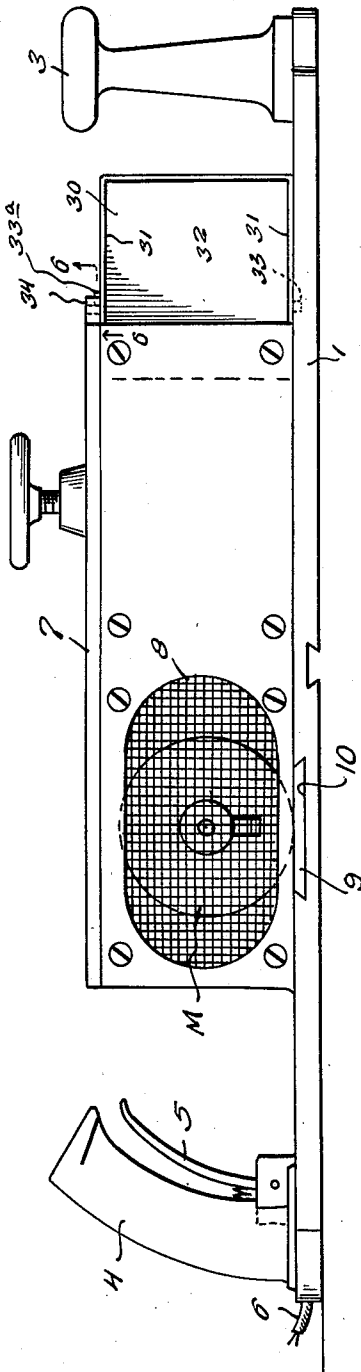
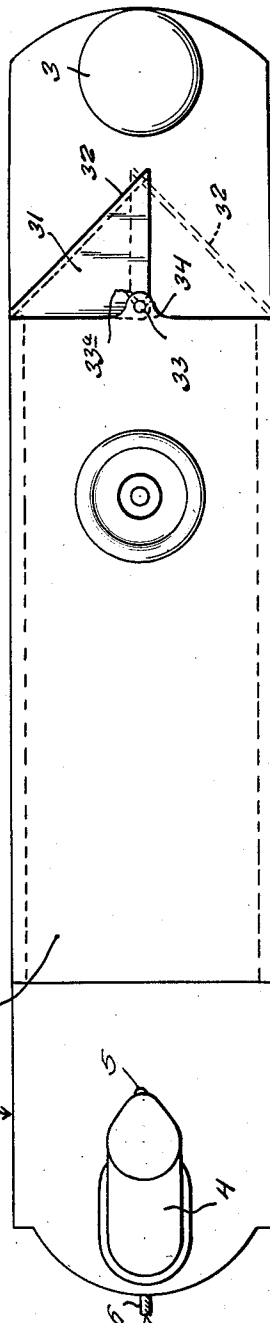


Fig. 2.



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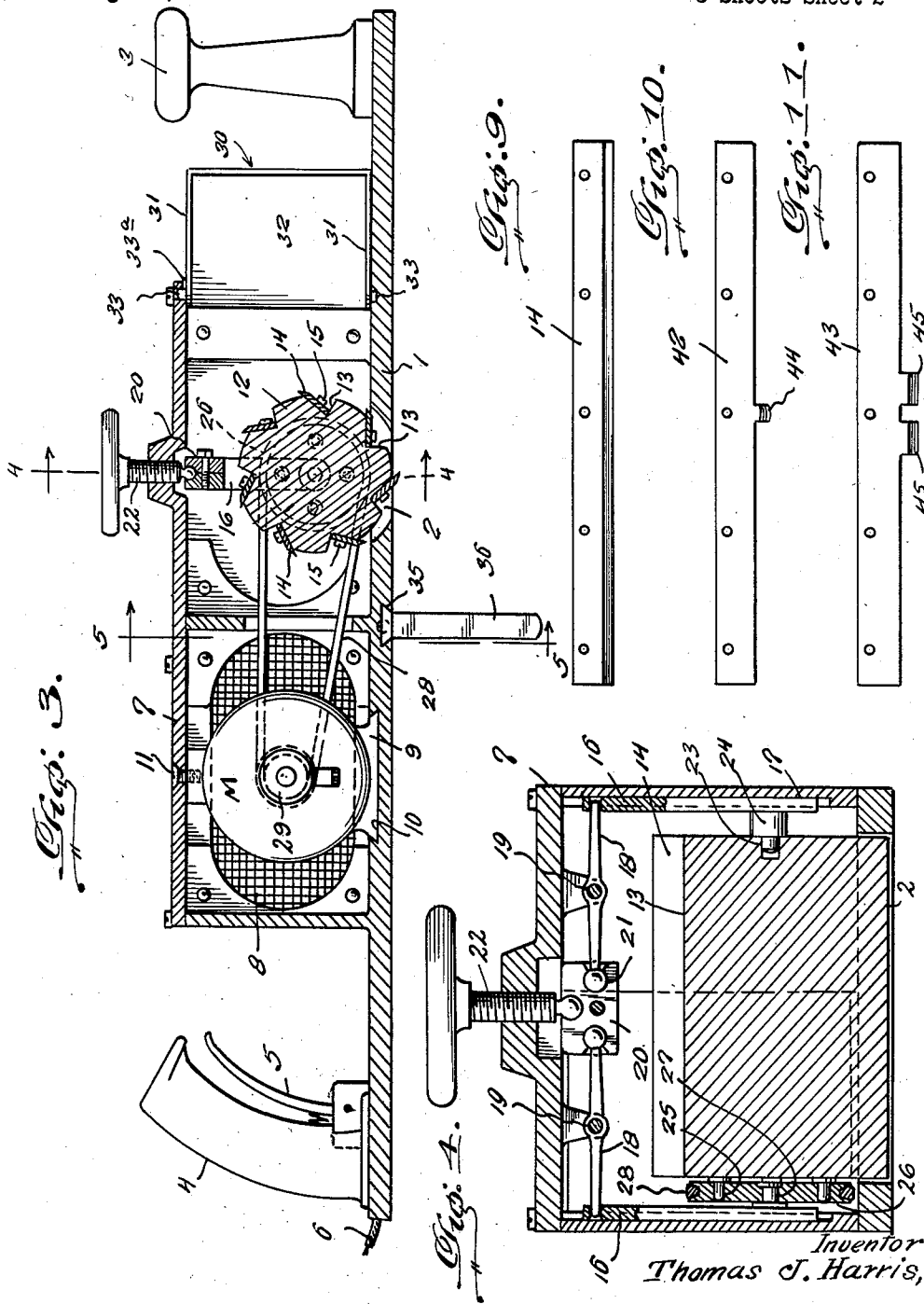
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HAND-OPERATED ELECTRIC POWERED
DRESSER

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3 Claims. (Cl. 145—5)

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The present invention relates to woodworking tools, and is more particularly concerned with a hand-operated electric powered dresser.

The primary object of the invention is to provide a carpenter's plane for wood dressing and sanding, which is powered by electricity but operated by hand.

Another object of the invention is to provide a hand-operated, electrically powered carpenter's plane of simpler and more compact construction than is disclosed by prior devices.

With the foregoing and other objects and advantages in view, the invention consists of the novel construction and arrangement of parts hereinafter described and claimed.

In the accompanying drawings illustrating the invention:

Figure 1 is a side elevation of the invention.

Figure 2 is a top plan view thereof.

Figure 3 is a vertical longitudinal section of the invention.

Figure 4 is a transverse section on line 4—4 of Figure 3.

Figure 5 is a transverse section on line 5—5 of Figure 3.

Figure 6 is a fragmentary bottom plan view on line 6—6 of Figure 1, viewed in the direction of the arrows.

Figure 7 is a detail perspective view of the pivotal deflector to carry off dust and shavings.

Figure 8 is a side elevation of the sanding cylinder.

Figure 9 is a plan view of a demountable plane edge tool for said cylinder.

Figure 10 is a plan view of a demountable single groover.

Figure 11 is a plan view of a demountable double groover.

Like numerals are used in the description and drawings to designate the same parts of construction.

1 is the flat, rectangular base of the plane and is provided with an enlarged transverse slot 2 for the dressing tools to operate in. At the front end of the plane is a vertical steadying post or handle 3 secured to the base. At the rear end of the base is a vertical handle 4 and lever 5 which operates a switch controlling the electric current from cable 6.

An elongated, rectangular housing 7 is mounted on the base 1 between the two handles and provided with removable top and side panels. The latter are provided with oppositely disposed openings and grilles 8 to provide a current of air forwardly. Mounted on a transverse slidable

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base 9, seated in a beveled-edge channel or dove-tail recess 10 in the upper surface of the base, is a motor M which is secured in place by a screw 11 threaded through the top of the housing and into the motor casing. This motor is located between the grilles.

A suitable distance in front of the motor and above the slot for the dressing tools is located a rotatable cylinder or drum 12. It is provided longitudinally with a series of angular recesses 13 in which the dressing tools 14 are removably secured by set screws 15. The cylinder 12 is supported in depending bars 16 mounted slidably in vertical guide slots 17 in the side panels of the housing. These bars are provided on their inner walls near their upper ends with sockets adapted to receive the outer ends of rocker arms 18 pivoted at the middle on studs projecting from lugs 19 depending from the under side of the housing top. The inner ends of the rocker arms are raised and lowered by means of a vertically adjustable block 20 and ball and socket joints 21. The block is split for the purpose of installing the bearings and secured together by threaded bolts. A thumb screw 22 is threaded through the housing top and connected to said block by ball and socket joint. The object of the foregoing mechanism is to raise and lower the cylinder 12 for attachment of dressing tools and to regulate the depth of the operation. At one end the cylinder is provided with a centered socket for the reception of a horizontal stud 23 projecting from one of the bars 16 and interposed between the bar and the end of the cylinder in a spacing collar or enlargement 24 on the stud. The opposite end of the cylinder is provided with a series of concentrically arranged studs 25 adapted to engage suitably arranged transverse holes in a pulley 26. This pulley is rotatably mounted on a stud 27 projecting inwardly from the opposing bar 16 and concentrically with the axis of the cylinder 12. This pulley is grooved peripherally for a transmission belt 28 which passes around a grooved pulley 29 on the shaft of motor M, and rotates the cylinder in a direction counterclockwise.

The front end of the housing 7 is open and provided on a vertical median line with a pivoted deflector 30 which has triangular top and bottom 31 and a vertical side 32 connecting the top and bottom at their hypotenuses. Projecting outwardly from top and bottom, adjacent to the right angle therein, are studs 33, the upper one of which is provided with projecting rib 33a. The upper stud is adapted to engage a perfora-

tion in an horizontal ear 34 which projects from the front of the housing top, while the bottom stud is seated in a socket in the base 1 which is aligned with the perforation in ear 34. The rib 33a on the upper stud is adapted to seat in the notches 34a on the under side of 34 to hold the deflector in either adjusted position. This pivotal deflector can be shifted to either side of the opening in the housing, as desired, to direct shavings and dust away from the operator who will be standing with this end of the plane near him. As the cylinder operates counterclockwise so as to work against the material the current of air coming through the grilles will force the shavings and dust forwardly and out at this end.

The under side of the base is grooved transversely, as at 35, with beveled side walls inclined inwardly for the reception of right-angle guides 36, adapted to be attached for the purpose of holding the plane square when cutting or smoothing edges or cutting grooves. The upper arms of the guides are suitably shaped on top to fit and slide endwise into said groove 35 and set screws 37 are threaded at an angle through the corners to impinge the bottom of the groove and prevent lateral movement.

When it is desired to sand the work the cylinder 12 can be replaced by cylinder 38 which has sandpaper 41 wrapped around and held in place by the transverse bar 39 and screws. A transverse groove 40 in the periphery of the cylinder permits the bar to rest inside its perimeter and the ends of the sandpaper 41 are joined under the bar. The ends of this cylinder are constructed as described for the cylinder 12, but it has no peripheral recesses 13 such as those for the cutters 14. When grooves are to be cut, the straight-edge blades 14 are removed and either 42 or 43 blades substituted. The former is provided with a single cutting tooth 44 adapted to cut one groove and the latter with two teeth 45 for two grooves.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A power plane comprising a substantially flat base plate having a transverse slot formed therein, handle means mounted upon the base plate to aid in manipulating the plane, a casing mounted upon the base plate and including substantially vertical spaced sides and a top, the sides of the casing being disposed near the opposite ends of the transverse slot, the sides of the casing being provided in their inner faces and adjacent to the transverse slot with transversely oppositely disposed substantially vertical grooves, substantially vertical slides mounted within the grooves for reciprocation, laterally inwardly projecting trunnions secured to the slides near their bottoms, a rotary cutter disposed within the casing and extending transversely thereof and projecting into the transverse slot of the base plate and having its opposite end journaled upon the trunnions, the vertical slides being provided near their top ends with recesses forming sockets, a pair of substantially horizontal transverse rocker arms disposed adjacent to the tops of the slides and pivotally mounted between their ends upon the top of the casing, said rocker arms being disposed below the top of the casing and within the casing, the outer ends of said rocker arms pivotally engaging within the sockets of the slides, the inner ends of said rocker arms being spaced apart and disposed near the transverse center of the casing, a vertically shiftable swivel block

mounted within the casing adjacent to the inner ends of the rocker arms and provided in its opposite sides with sockets pivotally receiving the inner ends of said rocker arms, a vertically shiftable adjusting screw mounted upon the top of the casing and extending through the casing and connected with the swivel block for shifting the block vertically to swing the rocker arms for raising and lowering the slides, a motor mounted within the casing and spaced from the rotary cutter, and drive means connecting the motor and cutter.

2. A power plane comprising a substantially flat base plate provided between its ends with a transverse slot, handle means mounted upon the base plate to aid in manipulating the plane, a casing mounted upon the base plate and including laterally spaced upstanding sides arranged adjacent to the opposite sides of the base plate and a substantially flat horizontal top connecting the tops of the sides, the upstanding sides of the casing being disposed near and outwardly of the opposite ends of the transverse slot, the sides of the casing being provided in their inner faces and adjacent to the slot with transversely oppositely disposed vertical grooves which extend substantially to the tops of the sides, elongated vertical slides mounted within the grooves for reciprocation, aligned laterally inwardly projecting trunnions secured to the slides near their bottom ends, a rotary cutter cylinder mounted within the casing adjacent to the transverse slot and projecting into such slot and extending transversely for substantially the entire length of the slot, the opposite end of the cutter cylinder being journaled upon the trunnions, the cutter cylinder being shiftable vertically with the trunnions and slides, the slides being provided near their top ends with transversely aligned recesses forming sockets, transversely spaced aligned depending lugs secured to the top of the casing and spaced laterally inwardly of the slides and disposed between the slides and the transverse center of the casing, substantially straight transverse horizontal rocker arms pivotally secured to the depending lugs for vertical swinging movement, said rocker arms being disposed near the tops of the slides and having their outer ends pivotally mounted within the sockets of the slides, said rocker arms extending upon opposite sides of the depending lugs and having their inner ends arranged near the transverse center of the casing in spaced relation, a bodily vertically shiftable swivel block disposed between the inner ends of the rocker arms and near the top of the casing and substantially at the transverse center of the casing, said swivel block being provided in its opposite sides with sockets pivotally receiving the inner ends of the rocker arms, the swivel block being provided in its top with a socket, a vertically shiftable adjusting screw mounted within the top of the casing and extending therethrough and having its lower end mounted within the socket in the top of the swivel block, said screw being turnable for shifting the swivel block vertically to raise and lower the cutter cylinder within the transverse slot, a motor mounted within the casing and spaced longitudinally from the cutter cylinder, and drive means connecting the motor and cutter cylinder for driving the cutter cylinder.

3. In a power plane, a substantially flat base plate provided with an opening, a rotary cutter mounted upon the base plate and projecting into the opening, a prime mover mounted upon the base plate and connected with the rotary cutter

to drive the same, handle means mounted upon the base plate to aid in manipulating the plane, a casing mounted upon the base plate and covering the rotary cutter and extending longitudinally beyond the opposite sides of the cutter and having one end open, the casing being low and including a substantially flat top, and a wood shavings deflector disposed adjacent to the open end of the casing and above the base plate and including top and bottom substantially flat triangular plates, the top plate of the deflector being disposed substantially at the elevation of the top of the casing and pivotally connected at one apex therewith, the bottom plate of the deflector substantially slidably contacting the upper face of the base plate and being pivotally connected at one apex with the base plate, the deflector including a substantially flat wide vertical plate connecting the edges of the top and bottom plates opposite said pivotal connections and swingable horizontally with the top and bottom plates so that shavings may be selectively deflected from the opposite sides of the base plate.

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