E. C. BROWARD.

PORTABLE HAND PLANER.

APPLICATION FILED APR. 13, 1918.

1,279,488.

Patented Sept. 17, 1918.

2 SHEETS—SHEET 1.

FIG. 1

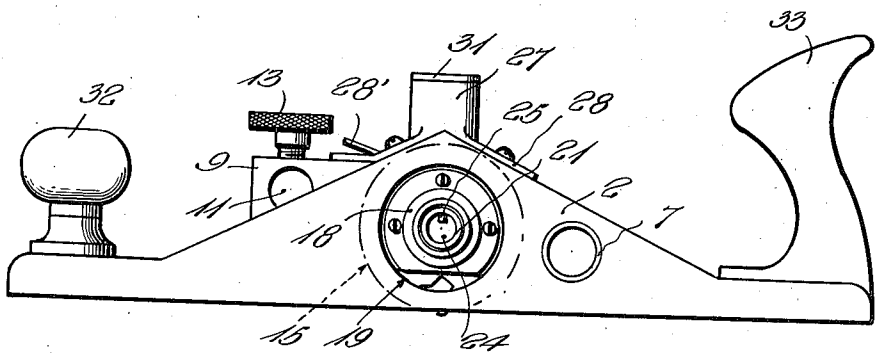


FIG. 2

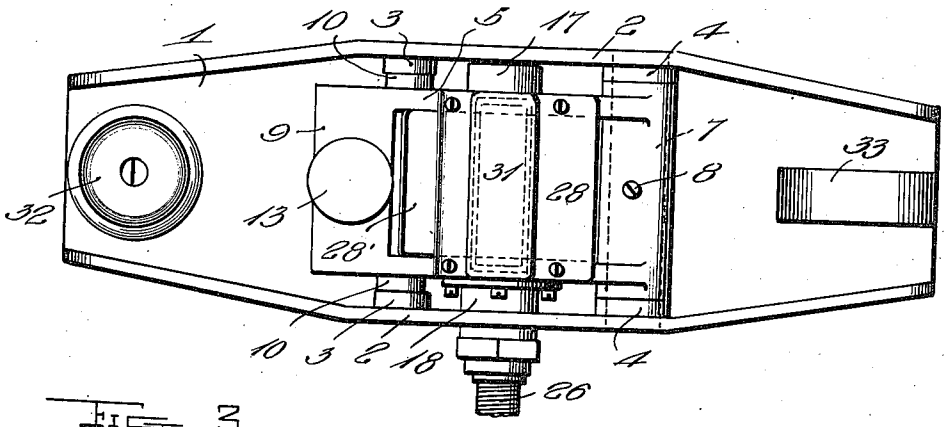
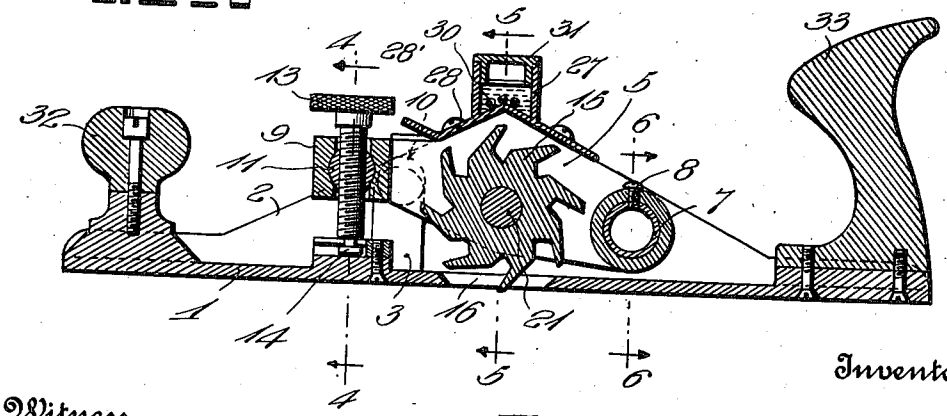


FIG. 3



Witness

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2 SHEETS—SHEET 2.

FIG. 4

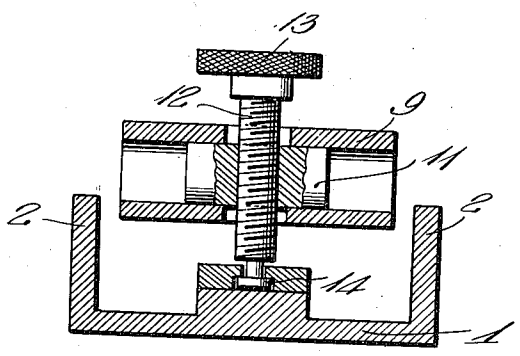


FIG. 5

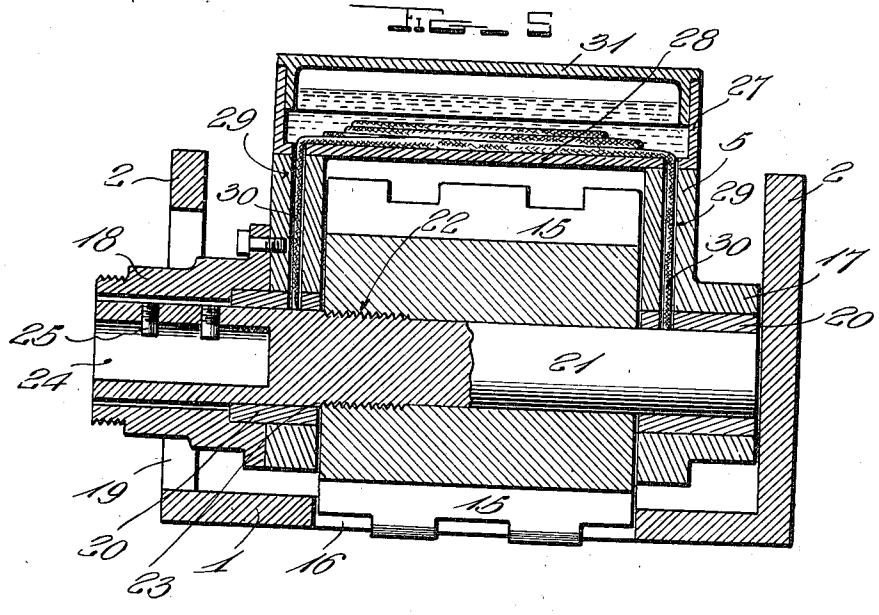
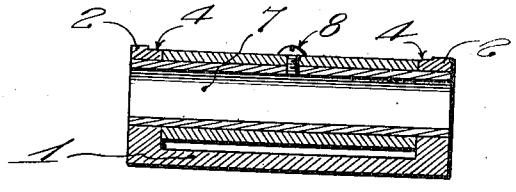


FIG. 6



Witness

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PORTABLE HAND-PLANER.

1,279,488. Specification of Letters Patent. Patented Sept. 17, 1918.

Application filed April 13, 1918. Serial No. 228,448.

To all whom it may concern:

Be it known that I, EDWARD C. BROWARD, a citizen of the United States, residing at South Jacksonville, in the county of Duval and State of Florida, have invented certain new and useful Improvements in Portable Hand-Planers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its principal object to provide an extremely simple and inexpensive, yet a highly efficient and durable planer which may be moved by the hands of the user over the work, so that the planing operation may be performed wherever necessary.

With the foregoing general object in view, the invention resides in the novel features of construction and unique combinations of parts to be hereinafter fully described and claimed, the descriptive matter being supplemented by the accompanying drawings which form a part of this specification and in which:

Figure 1 is a side elevation of the planer;

Fig. 2 is a top plan view thereof;

Fig. 3 is substantially a central longitudinal section; and

Figs. 4, 5 and 6 are vertical transverse sections on the planes indicated by the lines 4—4, 5—5 and 6—6 respectively of Fig. 3.

In the drawings above briefly described, the numeral 1 designates a suitably shaped horizontal base plate formed of cast metal and having integral side flanges 2, each of said flanges being provided with a front vertical rib 3 and a rear boss 4 on its inner side. An open cast metal tool carrying frame 5 is positioned between the flanges 2 and at its rear end is provided with a tubular transverse end bar 6 whose ends are machined and abut the machined inner ends of the bosses 4 to prevent possible lateral shifting of the rear end of the frame. A preferably tubular journal pin 7 passes through the end bar 6 and the bosses 4, and is secured to the former by a set screw or the like 8.

At its other end, the frame 5 is provided with a tubular transverse end bar 9 and adjacent the ends of this bar, the side bars of the frame are formed with lateral bosses 10 having machined ends which abut the machined ends of the ribs 3 to hold the front end of the frame against lateral vibration. A cylindrical rocker 11 is received in the end bar 9, said rocker and bar being formed with vertically alined openings as seen clearly in Figs. 3 and 4. A vertical screw 12 is threaded through the opening of the rocker 11 and passes loosely through those of the end bar 9, the upper end of said screw having a suitable head 13 while the lower end thereof is swiveled at 14 and at the same time slidably connected to the base plate 1. By adjusting the screw 12, it will be obvious that the front end of the frame 5 may be raised or lowered as occasion may demand to vary the depth of cut of the rotary tool 15, said tool being positioned between the side bars of the frame 5 and operating through an opening 16 in the plate 1. As the screw is adjusted and the frame swung upwardly or downwardly, the rocker 11 turns in the end bar 9 and at the same time the screw slides forwardly and rearwardly to a slight extent upon its connection 14.

One side bar of frame 5 is provided with a substantially central lateral boss 17 which preferably contacts with the adjacent flange 2, while the other side bar of said frame is provided with a removable coupling member 18 extending loosely through an opening 19 in the other flange (see more particularly Fig. 5). Bushings 20 are mounted in the boss 17 and the coupling member 18 and serve to rotatably support a short transverse shaft 21 upon which the cutter 15 is mounted, one end of said cutter being threaded at 22 on the shaft 21 into abutting relation with the shoulder 23 thereof. Whenever it is desired to remove the cutter for sharpening or for the substitution of another, a suitable key (not shown) may be inserted in a socket 24 in one end of shaft 21 and engaged with the studs 25 for the purpose of unthreading the shaft from the cutter previously used. The studs 25 normally coact with a suitable coupling (not shown) on one end of a driven flexible shaft 26, whereby to drive the shaft 21 and consequently the cutter 15.

Since it is highly expedient to provide efficient lubricating means for the shaft 21, I locate an oil reservoir 27 at the center of a detachable hood plate 28 secured to the upper edges of the side bars of frame 5, ports

29 being formed from said reservoir through said side bars and the bushings 20 as featured in Fig. 5. Wicks 30 lead from the reservoir 27 through the port 29 and bear at their lower ends against the shaft 21, whereby to carry oil from said reservoir to said shaft by capillarity. I have shown a cover 31 for the oil reservoir 27 and it will be understood that any preferred means may be employed for retaining this cover in place. Also, although I have shown well known handles 32 and 33 at the ends of the base 1, it will be understood that any other suitable means could here be provided for obtaining the required ends.

In operation, the cutter or tool 15 is rotated by the flexible shaft 26 and by operating the screw 12 may be adjusted upwardly or downwardly to vary the depth of cut as occasion may demand. Whenever it is necessary to remove the tools 15, the flexible shaft 26 is detached and a key inserted in the socket 24 so that shaft 21 may be removed from the tool, whereupon the latter may be removed from frame 5 by first detaching the cover plate 28. The front edge of this plate is preferably bent upwardly as seen at 28′ in Fig. 3 to permit the free escape of shavings.

Particular emphasis is laid on the provision of the bosses 4, the projecting ends of the rear end bar of the cutter frame, the bosses 10 and the ribs 3. By providing these parts, only their contacting faces need be machined to retain the cutter frame rigidly yet adjustably between the flanges 2. Also, the arrangement shown provides for pivoting the frame accurately with little machine work.

From the foregoing, taken in connection with the accompanying drawings, it will be obvious that although my invention is of extremely simple and inexpensive nature, it will be highly efficient and durable, and since probably the best results are obtained from the features shown and described, said features are preferably employed. Within the scope of the invention as claimed however numerous minor changes may well be made as occasion may dictate.

I claim:

1. A portable hand planer comprising a cast metal base plate having between its ends a transverse opening and provided with upstanding integral side flanges, said flanges having inwardly extending vertical ribs in front of said opening and inwardly projecting bosses in rear thereof, said ribs and bosses having their inner faces machined, an open rectangular cast metal cutter frame having a tubular rear end bar, the ends of said bar extending beyond the side bars of the frame and being machined for contact with the inner faces of said bosses, a pivot pin passing through said end bar and bosses to pivotally mount the frame, additional bosses on the side bars of the frame slidably abutting the inner faces of said ribs, a vertical screw for adjusting the front end of said cutter frame vertically, a rotary cutter mounted between the side bars of said frame and operating through said opening, and handles at the front and rear ends of said base plate.

2. A portable hand planer comprising a base having handles and provided with an opening, a cutter frame mounted on said base for vertical adjustment, a rotary cutter mounted between the side bars of said frame and operating through said opening, and a detachable hood plate over said cutter and carrying an oil reservoir, said hood plate being secured to said side bars of the frame, and said bars and plate having alined ports to carry oil from said reservoir to the bearings of said cutter.

In testimony whereof I have hereunto set my hand.

EDWARD C. BROWARD.