G. F. DYER & E. B. SCHWENK.

JACK PLANE.

APPLICATION FILED APR. 26, 1917.

1,270,023. Patented June 18, 1918.

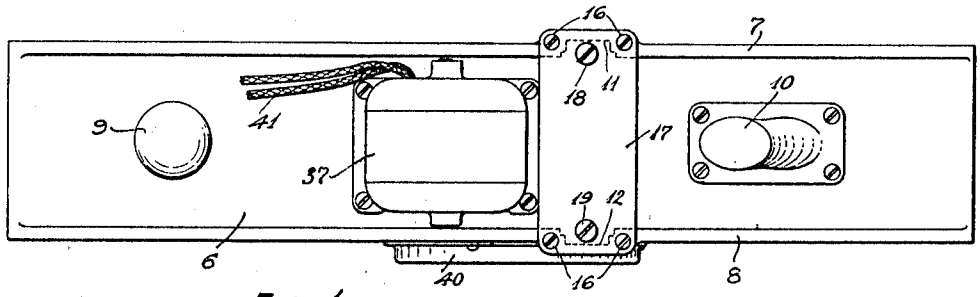


FIG. 1

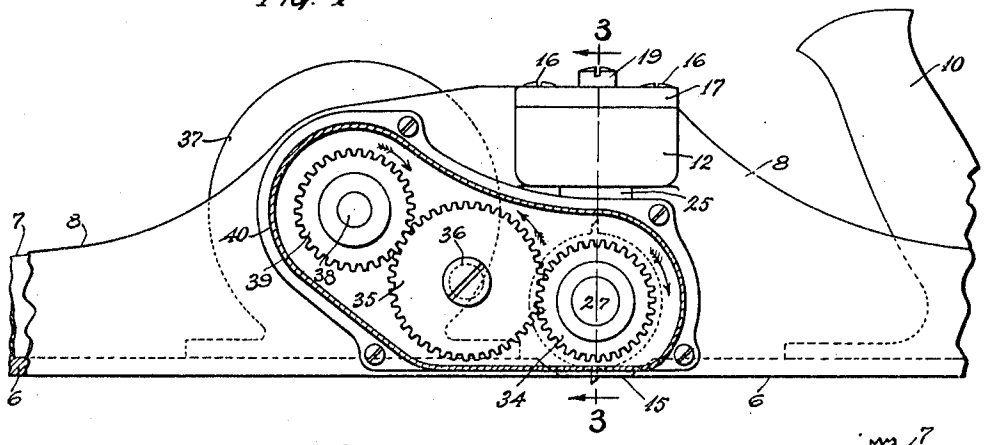


FIG. 2

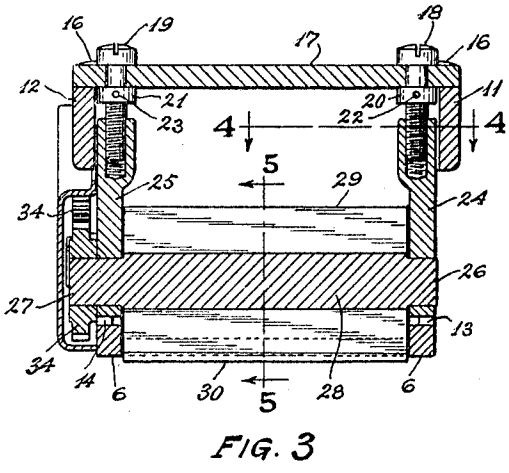


FIG. 3

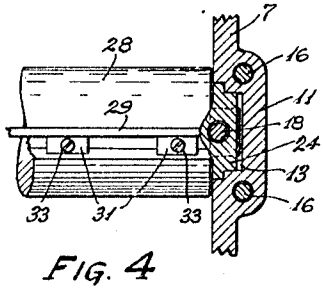


FIG. 4

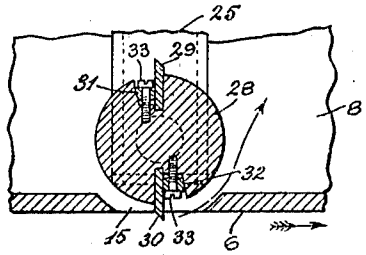


FIG. 5

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JACK-PLANE.

1,270,023. Specification of Letters Patent. Patented June 18, 1918.

Application filed April 26, 1917. Serial No. 164,801.

To all whom it may concern:

Be it known that we, GEORGE F. DYER and EARL B. SCHWENK, citizens of the United States, residing at Seattle, in the county of King and State of Washington, have invented a certain new and useful Improvement in Jack-Planes, of which the following is a specification.

Our invention relates to jack planes, and the object of our invention is to provide a jack plane which shall embody an electric motor, vertically adjustable bearings within which is rotatably mounted a cylinder carrying cutting blades, and means for communicating rotary motion from said motor to said cylinder, whereby said jack plane shall be operatively adapted smoothly to plane a surface of wood in response to its movements thereon, which movements may be manually effected by the expenditure of little effort of the operator.

We accomplish this object by devices illustrated in the accompanying drawings wherein—

Figure 1 is a plan view of a jack plane embodying our invention;

Fig. 2 is an enlarged fragmentary view in side elevation of the same, showing an external portion cut away better to disclose some operative parts;

Fig. 3 is a view of the same in vertical cross-section on broken line 3, 3 of Fig. 2;

Fig. 4 is a fragmentary view of the same in horizontal section on broken line 4, 4 of Fig. 3, and

Fig. 5 is a fragmentary view of the same in vertical section on broken line 5, 5 of Fig. 3.

Referring to the drawings, throughout which like reference numerals indicate like parts, 6 designates the oblong base plate of metal which is provided with integral flanges 7 and 8 which extend upwardly along the respective opposite side edges of said base plate 6 in planes at right angles to the plane of the bottom surface of said base plate 6.

Secured to the top surface of said base plate 6 are handles 9 and 10 of well known form, the handle 9 being disposed on the front portion and the handle 10 being disposed on the rearward portion of said base plate 6.

Forward of the handle 10, the upper portion of each of the flanges 7 and 8 at opposite points thereof, are formed to have an outwardly projecting off-set portion (as off-sets 11 and 12 indicated by dotted lines in Fig. 1 and by full lines in Figs. 2, 3, and 4), and extending downwardly in said flanges 7 and 8 from said off-sets 11 and 12 to a plane adjacent to the top surface of the base plate 6 are slotted openings 13 and 14 each of the form shown in cross-section in Fig. 4.

Extending transversely between the flanges 7 and 8 through the base plate 6, in a position registering with the bottom ends of the slotted openings 13 and 14, is an opening 15, as more clearly shown in Figs. 3 and 5.

Securely fastened to the top edge surfaces of the off-sets 11 and 12, by means of screws 16, is a transversely disposed plate 17 within whose opposite end portions adjacent to the inner sides of said off-sets 11 and 12 are rotatably mounted adjusting screws 18 and 19, respectively, which are prevented from vertical movements by collars 20 and 21, respectively, which are maintained in their vertical positions by pins 22 and 23, respectively.

The adjusting screws 18 and 19 are provided with a screw-thread extending downwardly from the collars 20 and 21, respectively, to their lower ends; and such screw-threaded portions of said adjusting screws 18 and 19 project each into a screw-threaded hole formed in a vertically movable journal bearing block, as shaft bearing blocks 24 and 25, respectively, which are slidably disposed in the vertical slotted openings 13 and 14, respectively, whereby said journal bearing blocks 24 and 25 may each be vertically moved to and be supported in a desired position.

Each of the journal bearing blocks 24 and 25 is provided with a journal bearing in its lower end portion within which bearing block is rotatably disposed a different one of the journals, as journals 26 and 27, respectively, of a cylinder 28 which extends between said blocks 24 and 25, as shown more clearly in Fig. 3.

The cylinder 28 is provided with oppositely disposed longitudinal grooves that extend throughout its length, and within said grooves are clamped planer cutters 29 and 30 by means of clamping blocks 31 and 32, respectively, which are secured by screws 33, as shown more clearly in Figs. 4 and 5, the cutting edges of which cutters 29 and 30, in the course of their revolutions, may

be projected through the opening 15 to a desired point beyond the plane of the bottom surface of the base plate 6 in response to a manipulation of the adjusting screws 18 and 19.

An end portion of the journal 27 of the cylinder 28 projects outwardly through the journal bearing block 25 and on such outwardly projecting end portion is fastened a gearwheel 34 which operatively engages with an idler gearwheel 35 that is rotatably mounted on a screw stud 36 in the outer side of the flange 8.

Mounted on the top surface of the base plate 6 forward of the off-sets 11 and 12 is an electric motor 37, one end portion of whose shaft 38 projects through and outwardly from the flange 8, and on such outwardly projecting end portion of said shaft 38 is fastened a gearwheel 39 disposed operatively to engage with the idler gearwheel 35; thus upon a rotation of the motor shaft 38 the gearwheel 34 and cylinder 28 will revolve in the directions indicated by arrows, as more clearly shown in Fig. 3.

The gearwheels 34, 36 and 39 are inclosed by a housing 40 secured to the outer side of the flange 8, thereby to prevent chips and dirt from finding access to the teeth of said gearwheels.

In the operation of our jack plane the conducting cords 41 of the motor 37 are extended to connect with a switch controlled electric circuit, not shown, and thereupon current is admitted to the said motor 37 to cause its shaft 38 to revolve in the direction indicated by the arrow in Fig. 3, and thereupon the adjusting screws 18 and 19 are actuated vertically to move the journal bearing blocks 24 and 25 to such a position as will cause the cutting edges of the revolving cutters 29 and 30 to project lower than the bottom surface of the base plate 6 for such distance as will adapt them operatively to plane the surface of an object in engagement with said base plate 6.

Obviously, changes may be made in the forms, dimensions and arrangement of parts of our invention without departing from the spirit thereof.

What we claim is:

A plane of the class described comprising a base plate provided with parallel flanges extending upwardly from its opposite side edges, each flange provided intermediate its ends with a lateral offset portion provided with a vertical slot registering at the lower ends with the transverse slot formed in the base, a transverse plate removably secured to the top edges of the lateral offset portions of said flanges and covering the upper ends of said slots, a journal bearing block slidably fitted in each vertical slot, adjusting screws fitted through said plate and engaging the said blocks whereby said blocks may be adjusted to different positions with relation to the base, a transverse cylinder located between and journaled to each block, a plurality of cutting blades removably secured to said cylinder, an electric motor secured upon said base and having one end of its shaft extending through one of said side flanges, gear wheels associated with one end of the cylinder and with the extended end of the shaft whereby when the motor is energized said cylinder shall be rotated, and a housing secured to the exterior of one side flange and completely covering said gears.

In witness whereof, we hereunto subscribe our names this 20th day of April A. D., 1917.

GEORGE F. DYER.
EARL B. SCHWENK.