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C. E. GOODRIDGE

2,395,268

HAND PLANE

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2 Sheets-Sheet 1

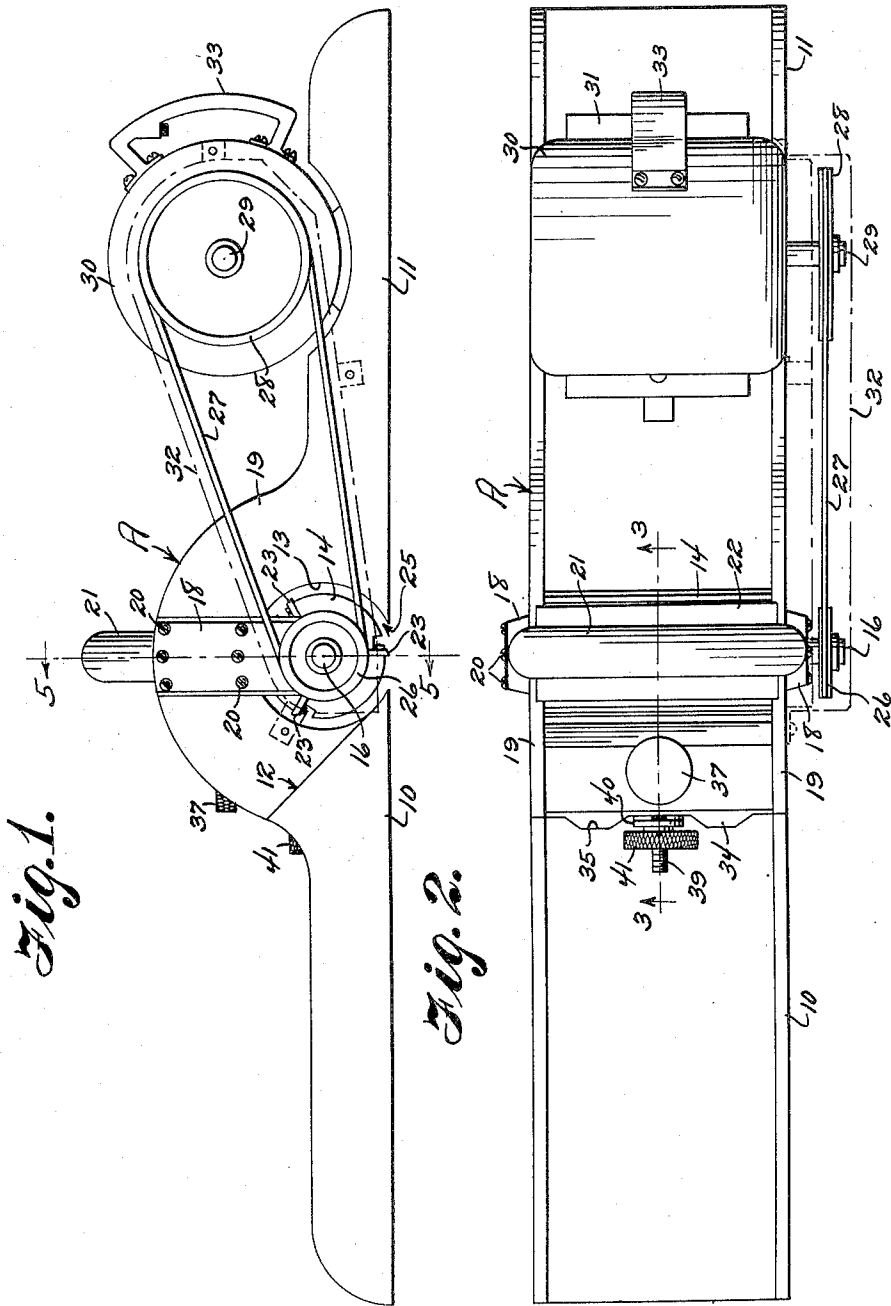


Fig. 1.

Fig. 2.

Clarence E. Goodridge INVENTOR.

BY

Victor J. Evans & Co.

ATTORNEYS

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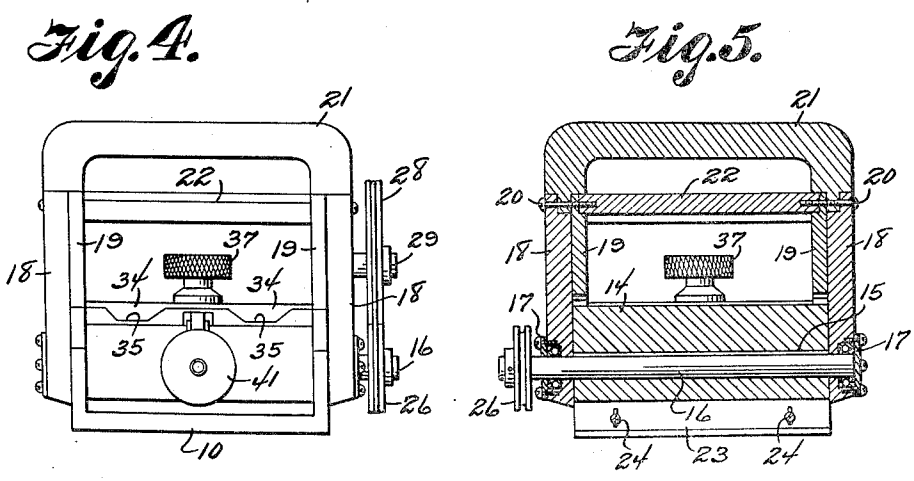
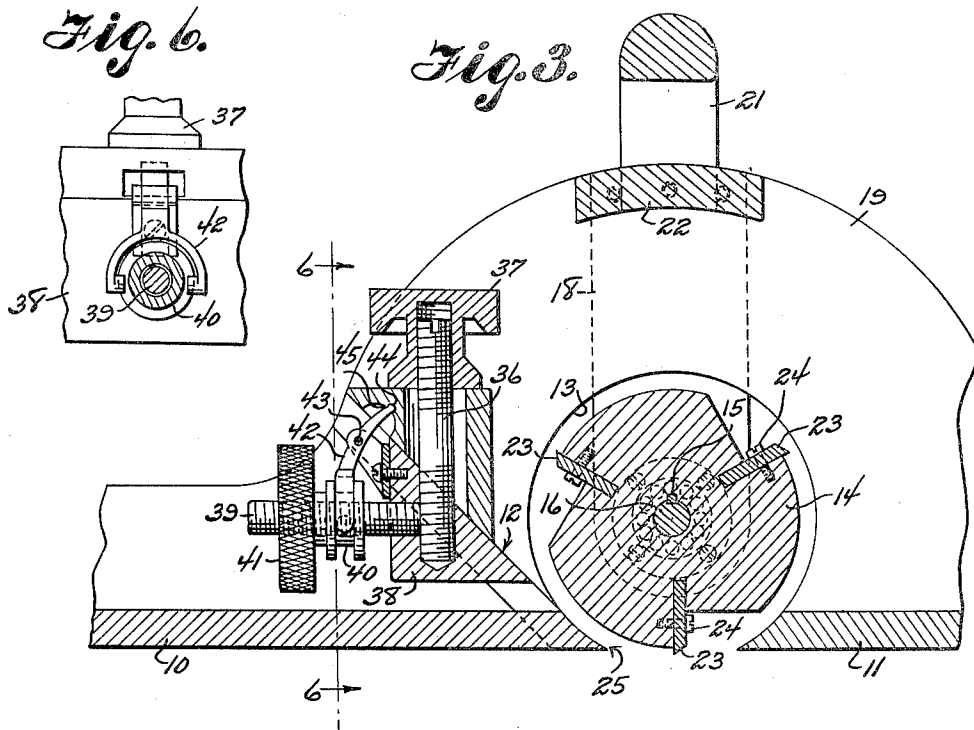
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BY
Victor J. Evans & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE

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HAND PLANE

Clarence E. Goodridge, Campbell, Calif.

Application, September 9, 1943, Serial No. 501,683

1 Claim. (Cl. 145—5)

The invention relates to a carpenter's plane, and more especially to a power driven hand plane.

The primary object of the invention is the provision of a plane of this character wherein the frame or block is in two sections adjustable relative to each other to vary the position of the cutter blades for shallow or deep cutting of the plane in the working thereof, the plane being hand guided or manipulated while the cutters are power driven.

Another object of the invention is the provision of a plane of this character wherein the adjustment of the sections of the frame or block of the plane is of novel arrangement, being readily and easily accessible and susceptible of convenient adjustment.

A still further object of the invention is the provision of a plane of this character wherein the cutter blades are carried by a rotor and the same is mounted in the plane, frame or block in a novel manner.

A still further object of the invention is the provision of a plane of this character wherein the motor of the electric type is bodily supported thereby and said plane is conveniently handled through the use of handle grips properly disposed for the guiding of the plane and the successful working thereof.

A still further object of the invention which is simple in its construction, thoroughly reliable and efficient in operation, strong, susceptible of accurate adjustment and inexpensive to manufacture.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described in detail, illustrated in the accompanying drawings, which disclose the preferred embodiment of the invention and pointed out in the claim hereunto appended.

In the accompanying drawings:

Figure 1 is a side elevation of the plane constructed in accordance with the invention.

Figure 2 is a top plan view thereof.

Figure 3 is an enlarged fragmentary sectional view taken on the line 3—3 of Figure 2, looking in the direction of the arrows.

Figure 4 is an end elevation.

Figure 5 is a sectional view taken on the line 5—5 of Figure 1, looking in the direction of the arrows.

Figure 6 is a fragmentary sectional view taken on the line 6—6 of Figure 3, looking in the direction of the arrows.

Similar reference characters indicate corre-

sponding parts throughout the several views, in the drawings.

Referring to the drawings in detail, A designates generally a plane constructed in accordance with the invention and is of a power driven type, as will be hereinafter fully described.

The plane A comprises a frame or block involving relatively movable front and rear sections 10 and 11 respectively, in this instance the said frame or block being made from metal and the said sections 10 and 11 thereof are slidably united with each other along a diagonal line 12 immediately forwardly of a substantially circular shaped rotor space 13 transversely disposed in the said section 11.

Within the space 13 is a rotor 14, it being splined or keyed at 15 to a driven shaft 16 mounted in bearings 17, these being fitted to removable hanger plates 18 fixed in suitable slots or ways provided in opposite side walls 19 of the section 11 through the medium of removable fasteners 20. The hanger plates through the medium of the fasteners 20 are associated with a bridging handle 21 which is disposed crosswise of the section 11 immediately above a bridge piece 22 interfitted between the side walls 19 of the said section 11.

The rotor 14 has radially disposed planer blades 23 adjustably fastened in position by fasteners 24. These blades 23 are projected through a cutting gap 25 in the section 11 the blades are set in the position as shown in the rotor 14 and their cutting edges are adapted to be exposed through the slot 25 for the cutting operation thereof in the use of the plane.

The shaft 16 carries a belt pulley 26 over which is trained an endless driving belt 27, the latter being also trained over a belt pulley 28 on a power shaft 29 of an electric motor 30, its base 31 being stationary and adjustably fastened to the section 11 in any suitable manner. Suitable guides are provided for the belt 27 and one of these guides being indicated at 32 on the section 11. The motor 30 carries a hand grip 33 so that an operator can grasp this grip as well as the handle 21 in the manipulation of the plane for the planing operation thereof.

The sections 10 and 11 at the diagonal line 12 are slidably interfitted through the medium of a tongue and groove joint, the tongues being indicated at 34 while the grooves are indicated at 35 in the respective sections 10 and 11.

Built in the section 11 at the joint between it and the section 10 is a depth adapter screw 36 carrying a hand actuated adjusting nut 37 exposed upwardly of the frame or block, and this

screw 36 is held in a bearing 38 constituted in the section 10 so that by hand actuation of the nut 37 the sections 10 and 11 can be moved relative to each other for depth cutting adjustment of the plane.

Forwardly of the bearing 38 and fitted therein is a stud bolt 39 it being horizontally disposed and has screw fitted thereon a follower 40 actuated by an adjusting nut 41. This follower is operative upon a trigger 42 pivoted at 43 and fulcrumed at 44 in a bearing 45 for the screw 36 so that on adjustment of the nut 41 proper adjustment is attainable between the sections 10 and 11 of the plane.

It will be apparent that the rotor 14 is driven directly from the motor 30 and thus on rotation of the blades 23 cutting operation of the plane for plane activity thereof is assured. The plane is guided and directed by the grip 33 and handle 21 when engaged by the hands of the user of the plane.

The nut 41 assures accurate setting for depth adjustment of the plane while the nut 37 enables the secure setting of such adjustment to avoid any displacement of the sections 10 and 11 with respect to each other when the plane is in operation.

What I claim is:

In a plane a two part planing block each having a bottom and two opposite side walls, an inclined tongue and groove joint fitting between the parts thereof immediately forwardly of a substantially circular shaped rotor space transversely disposed in one of said parts, means for adjusting one of the parts relative to the other for depth adjustment of the block, means for locking such adjusting means against activity, a power driven cutter rotor fitting in said rotor space in one of the parts of the block, said cutter rotor having its bearings in removable hanger plates, which are fixed in slots provided on opposite side walls of said one part of the block, a motor for driving the cutter rotor situated to the rear of said rotor space, a belt on one side of the block connecting the motor with the rotor, guides for said belt on said block, a curved bridge member secured to the upper ends of said hanger plates, a handle on said plates, parallel with and immediately above said bridge member, a grip on said motor, and radially disposed cutting blades included in said cutter rotor and adjustably associated therewith.

CLARENCE E. GOODRIDGE.