Nov. 23, 1926.

1,608,037

E. ROCHON

WOODWORKING MACHINE

Filed May 25, 1923

3 Sheets-Sheet 1

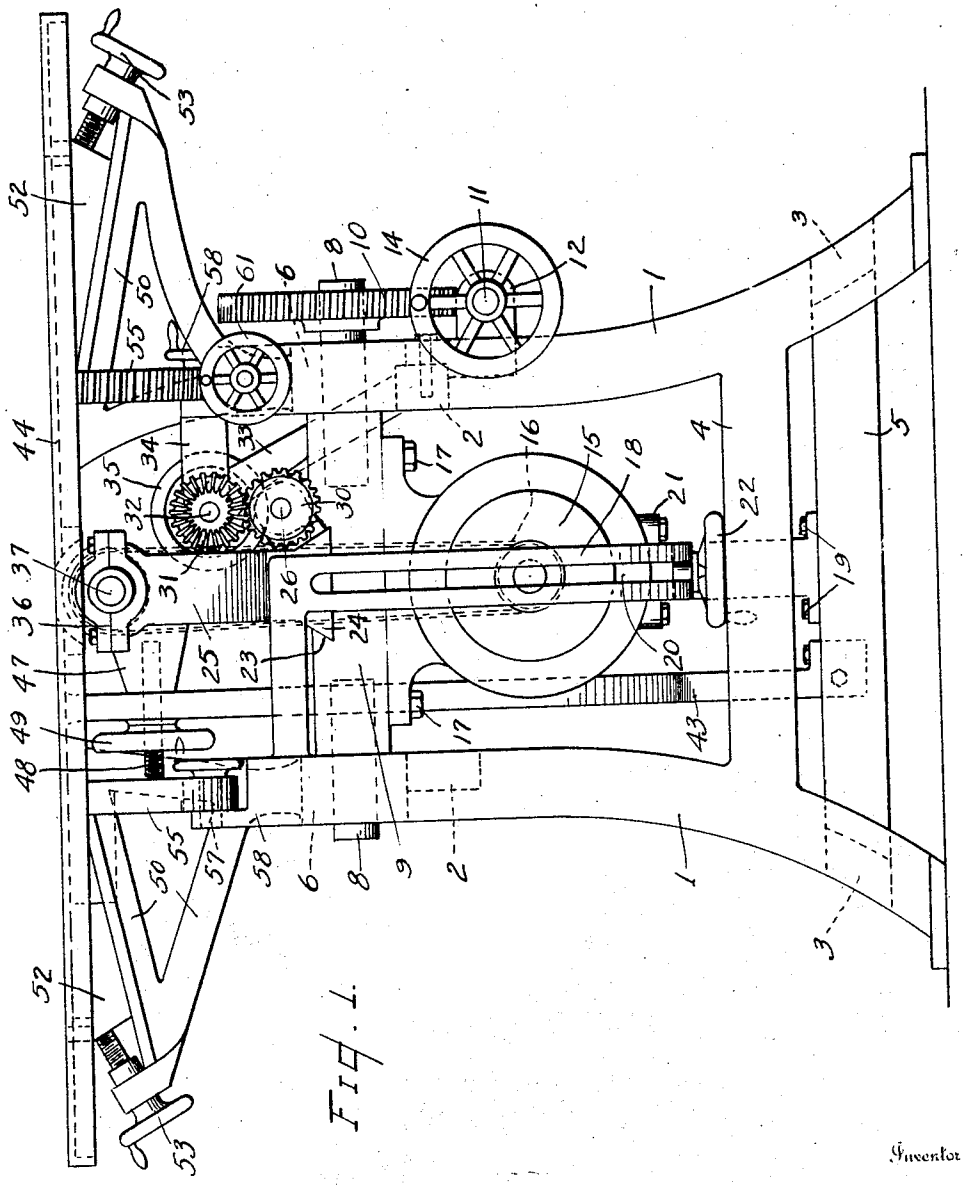


Fig. 1.

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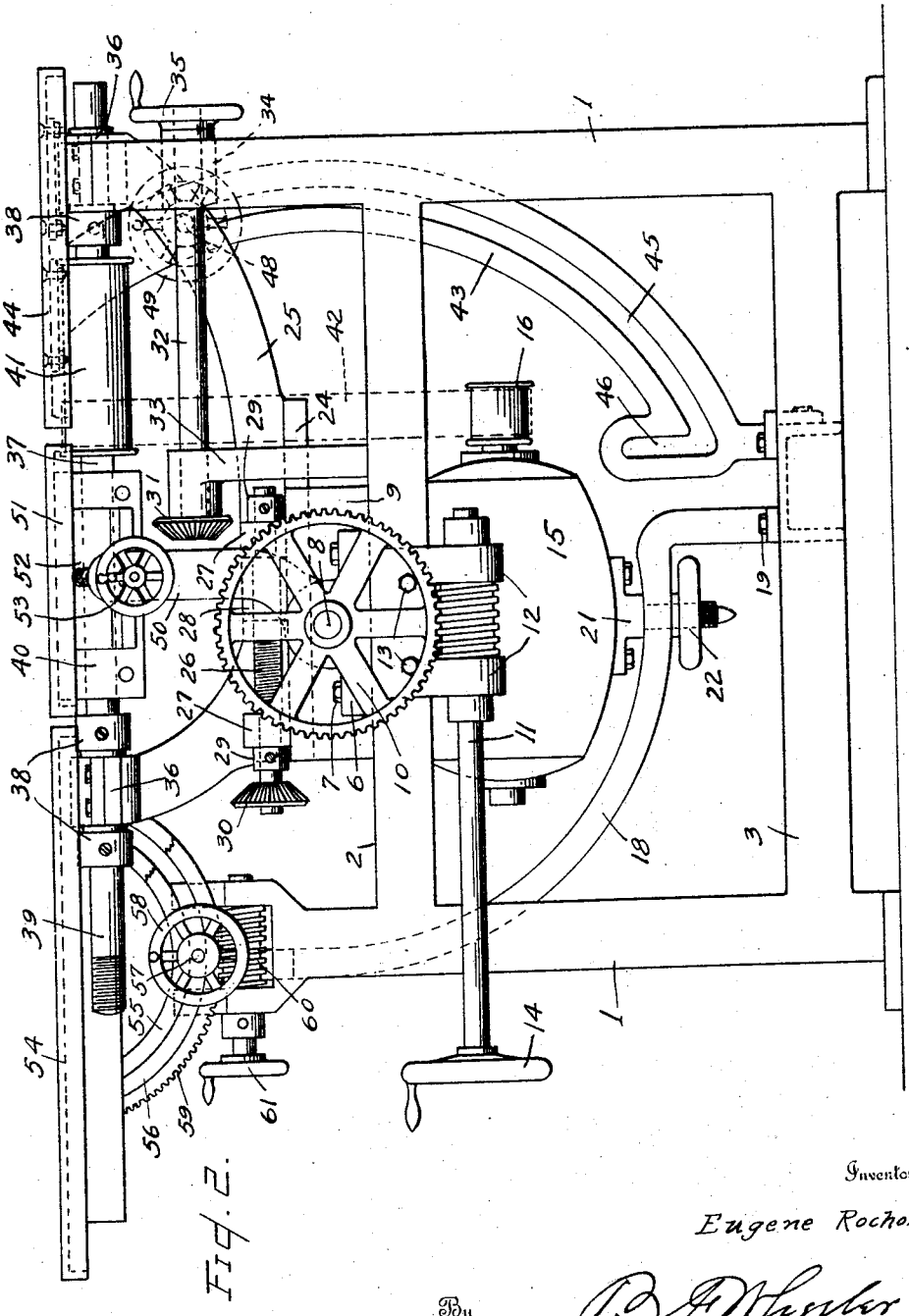


Fig. 2.

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3 Sheets-Sheet 3

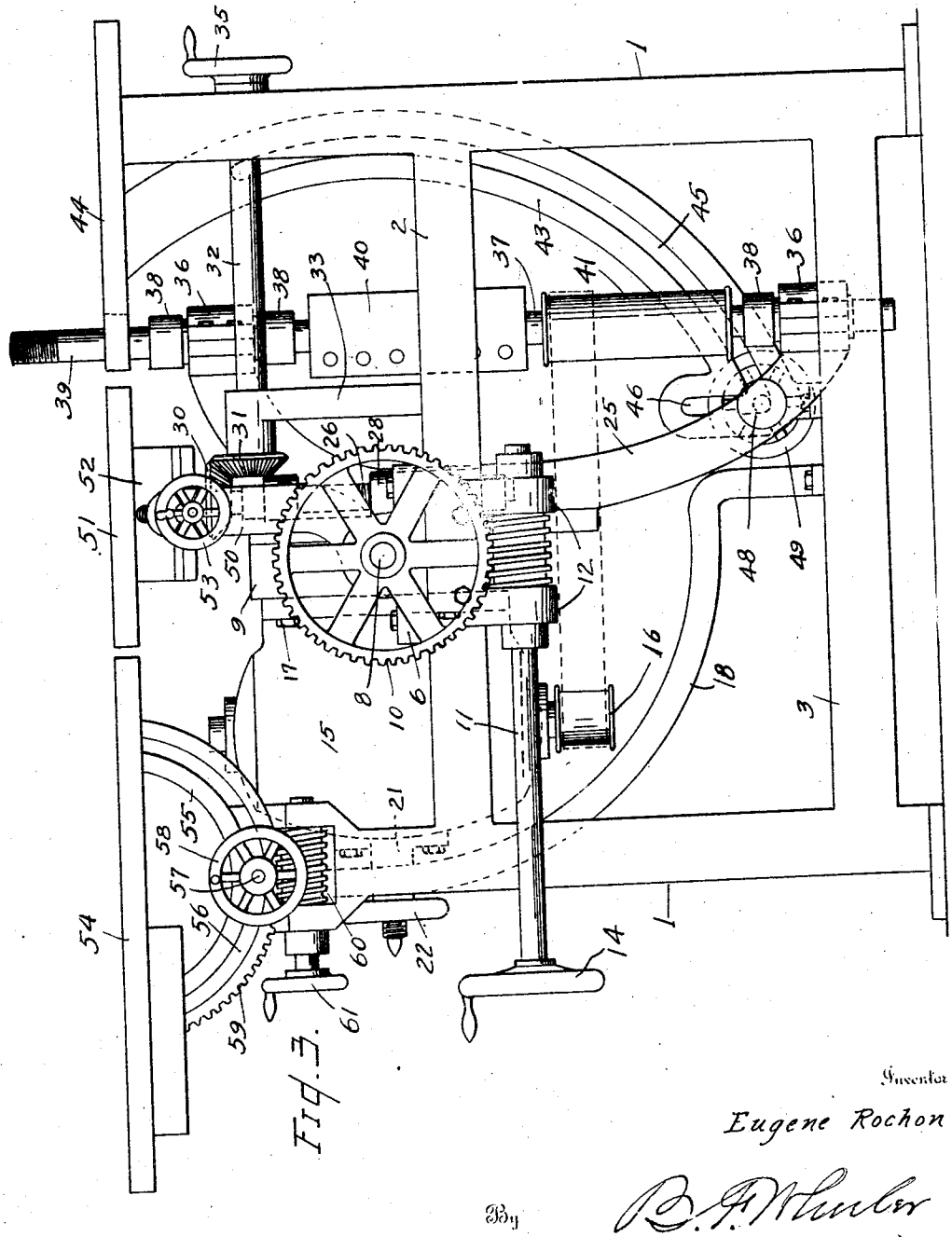


Fig. 3.

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UNITED STATES PATENT OFFICE.

EUGENE ROCHON, OF FORD CITY, ONTARIO, CANADA.

WOODWORKING MACHINE.

Application filed May 25, 1923. Serial No. 641,356.

This invention relates to woodworking machines and particularly to machines rendered convertible to adapt them to use for various machining operations.

It is the object of the invention to provide a machine of this character in which the power transmitting means comprising a driving motor and a driven mandrel are combined in a unitary mounting pivotally supported upon the frame of the machine and connected with controlling means by which said mounting may be tilted bodily to establish said mandrel in angular driven positions relative to said frame, a further provision being made for effecting adjustment of the mandrel longitudinally upon the mounting in a certain established position of the latter.

A preferred embodiment of the invention is illustrated in the accompanying drawings, wherein,

Fig. 1 is an end elevation of the machine.

Fig. 2 is a side elevation showing the parts as in the position of Fig. 1, in which the mandrel is in a horizontal plane for use as a saw arbor or the like.

Fig. 3 is also a side elevation showing the power transmitting unit tilted with the mandrel in a vertical position to serve as the spindle of a shaper.

In these views the reference character 1 designates the legs of a frame connected upon opposite sides by upper and lower transverse rails 2 and 3 respectively, cross rails 4 at opposite ends and an intermediate cross rail 5 connecting the lower side rails 3, the parts being preferably formed integral. Journal bearing boxes 6 are secured by bolts 7 upon the side rails 2 intermediate the ends of the frame and mounted upon trunnions 8 journaled in said bearings is a platform 9 adapted to tilt or rock thereon through a range of 90 degrees, movement being imparted to tilt and to some extent retain said platform in angular positions of adjustment by means of a worm wheel 10 fixed upon a trunnion 8 and meshing with a worm shaft 11 journaled in a bearing bracket 12 secured by bolts 13 to a side rail 2 of the frame, said worm shaft having a hand wheel 14 by which it may be rotated.

An electric motor 15 having a pulley 16 is secured at its base by bolts 17 to the under face of the platform 9 to swing in unison therewith, and extending concentric with the pivotal axis of said platform in spaced relation to the under face of said motor is an arcuate brace 18 engaged at its upper end with a leg 1 and secured at its lower end by bolts 19 with the rail 5 of the frame. Said brace has a radial slot 20 receiving the stem of a boss 21 bolted to the motor and having screw threaded engagement with a hand wheel 22 by means of which said motor may be clamped to said brace in any tilted position of the platform.

Formed in the upper face of said platform is a transverse way or groove 23 having undercut edges for the reception of the correspondingly shaped base 24 of a yoke shaped journal bracket 25 adapted to slide longitudinally therein. Movement of said bracket is controlled by a screw shaft 26 journaled at opposite ends in bearings 27 integral with said platform and having screw threaded engagement intermediate said bearings with a lug 28 projecting laterally from the bracket 25. Said shaft is held against axial movement in its bearings by collars 29 and has fixed upon one end thereof a beveled gear 30 adapted to mesh with a beveled gear 31 in the tilted position of the platform as shown in Fig. 3. The gear 31 is mounted upon a horizontal shaft 32 which is journaled at one end in a bearing extension 33 on the rails 2 of the frame and at its opposite end said shaft is journaled in a bearing 34 on a leg 1 of the frame and carries a hand wheel 35 by which it may be rotated to transmit rotation to the screw 26 and impart movement to the bracket 25 longitudinally thereof.

The extremities of the bracket 25 are provided with bearing boxes 36 in which a shaft 37 is journaled adjacent its ends and which is retained against axial movement by thrust collars 38 engaging said bearings. One end 39 of said shaft projects beyond said bracket and is adapted to serve as a saw arbor in the horizontal position as

shown in Figs. 1 and 2, and as a shaper spindle in the vertical position of Fig. 3, said end being screw threaded for the reception of binding nuts for securing thereon cutting tools (not shown). Intermediately said shaft is provided with a cutter head 40 to serve as a jointer and carries a pulley 41 connected with the pulley 16 of the motor by a belt 42, indicated by dotted lines, through which power from the motor is transmitted to said shaft.

At the rearwardly projecting end of the bracket 25 is an arcuate brace 43 bolted at its lower end to the frame rail 5 and suitably engaged at its upper end with a stationary table 44 mounted on said frame. Said brace has a transverse slot 45 concentric with the axis of the platform 9, terminating in a vertical extension 46 at the lower end thereof, and extending through said slot from a lateral boss 47 on the bracket 25 is a screw threaded stem 48 engaged by a hand wheel 49 by which said bracket may be clamped to said brace in tilted positions of said platform, the vertical slot 46 being adapted to accommodate axial adjustment of the shaft 37 in the vertical position of the bracket, as in Fig. 3.

Supported upon laterally extending inclined brackets 50, integral with the bearings 6, are like sections 51 of a centrally divided table the sections of which are similarly mounted upon adjustable wedges 52 engaged by the screws of hand wheels 53 journaled in said brackets and by means of which said sections may be adjusted relative to the cutter head 40.

A tiltable table 54 is supported above the spindle 39 upon spaced rocker brackets 55 engaged with the upper ends of the legs 1, each having an arcuate slot 56 receiving a stud 57 anchored in the leg and screw-threaded engagement with a hand wheel 58 for clamping said brackets to said legs. The periphery of one of said brackets is formed with worm gear teeth 59 in mesh with a worm shaft 60 journaled in a leg 1 and having a hand wheel 61 for rotating said shaft to impart a rocking movement to said brackets and effect a tilting of said table.

It will now be understood that with the parts in the position of Figs. 1 and 2 the driven shaft 37 is so disposed as to enable the cutter head 40 to be used in connection with the table sections 51 for planing and jointing purposes, while the spindle 39 may be employed with the tiltable table 54 for various sawing operations. By releasing the hand wheels 22 and 49 from binding engagement with their respective braces and having separated the table sections 51 and tilted the table 54 sufficiently to provide clearance for passage of the spindle 39, the hand wheel 14 may be rotated to turn the gear 10 and swing the platform 9 with the motor 15 and driven shaft 37 to the vertical position of Fig. 3. In this position the gear 30 will mesh with the gear 31, and the stem 48 of the bracket 25 will have passed into the slot 46 of the brace 43, so that upon rotating the hand wheel 35 motion will be transmitted through said gears to turn the worm shaft 26 through which movement will be imparted to vertically adjust the bracket 25 and establish the shaft 37 in the desired axial relation to the table 44 to enable the spindle 39 to be employed for shaping operations.

What I claim is:

1. A woodworking machine comprising a frame, a platform pivotally mounted to tilt on said frame, a power shaft journaled in bearings carried by said platform, a motor mounted on said platform in driving engagement with said shaft, actuating means carried by the frame for tilting said platform, and clamping means carried by said motor and engageable with the frame for securing said platform against pivotal movement.

2. A woodworking machine comprising a frame, a support pivotally mounted to tilt on said frame, a shaft rotatively carried by said support, means for pivotally actuating said support, an element carried by said support actuable to shift said shaft longitudinally upon said support, and an actuating member for said element mounted upon said frame independently of said support and operatively engageable by and disengageable from said element through pivotal movement of said support.

3. A woodworking machine comprising a frame, a support mounted upon said frame to tilt about a pivotal axis, a shaft rotatively mounted upon said support to tilt therewith at one side of said axis, a drive element for said shaft carried by said support at the other side of said axis, a flexible drive connection from said element to said shaft, means for adjusting the shaft lengthwise upon said support independently of said drive connection, and means for tilting said support.

4. A woodworking machine comprising a frame, a support pivotally mounted to tilt on said frame, a motor mounted upon said support, a shaft rotatively carried by said support and adjustable lengthwise on said support independently of said motor, a drive connection from said motor to said shaft, an element carried by said support actuable to shift said shaft lengthwise, and an actuating member for said element mounted upon said frame independently of said support and operatively engageable with and disengageable from said element through pivotal movement of said support.

5. A woodworking machine comprising a frame, a support pivotally mounted to tilt on said frame, a bracket slidably mounted

upon the support, a shaft journaled in said bracket, and extending in the direction of sliding of said bracket, an adjusting screw upon the support engaging said bracket, drive means for said adjusting screw mounted upon the frame independently of said support, and a drive element for said screw carried by the support and engageable with and disengageable from said drive means by pivotal movement of said support.

In testimony whereof I sign this specification.

EUGENE ROCHON.