Mar. 3, 1925. 1,528,536

R. E. DE WALT

WOODWORKING MACHINERY

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Fig. 1.

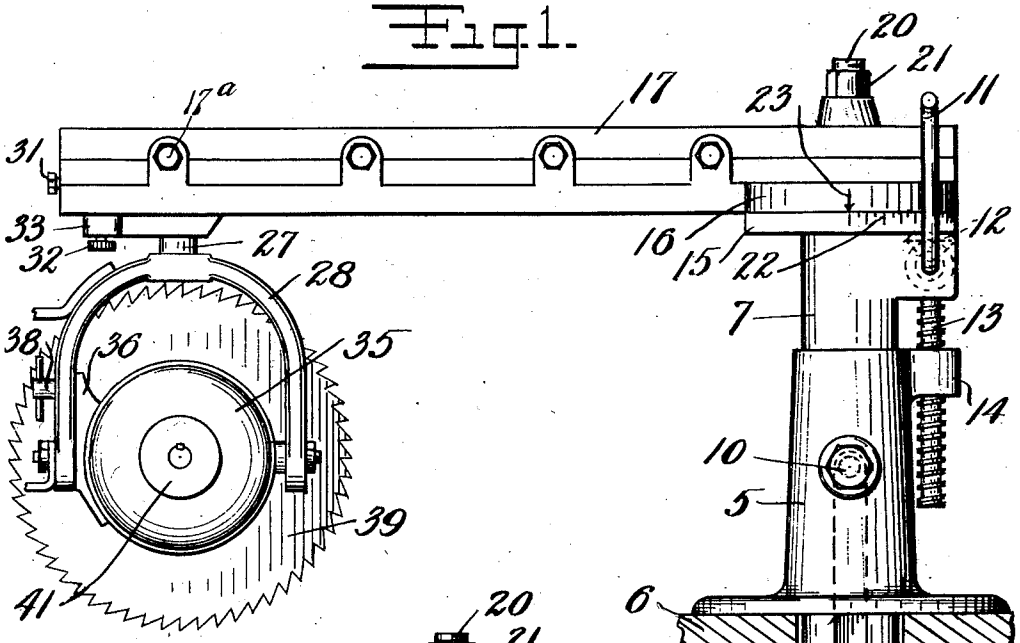


Fig. 2.

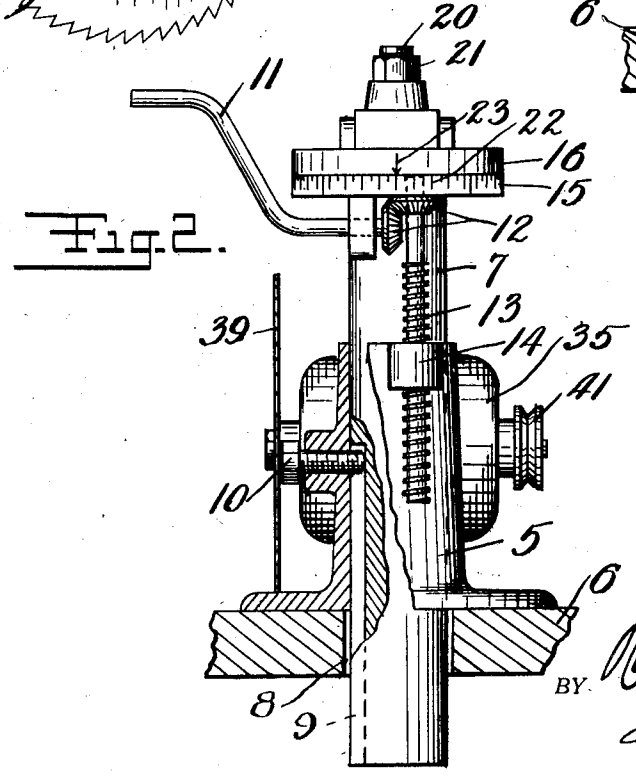
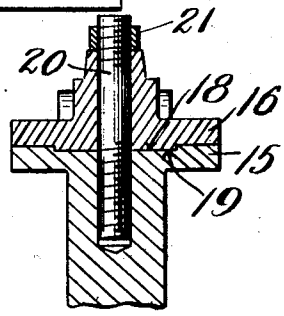


Fig. 3.



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Fig. 4.

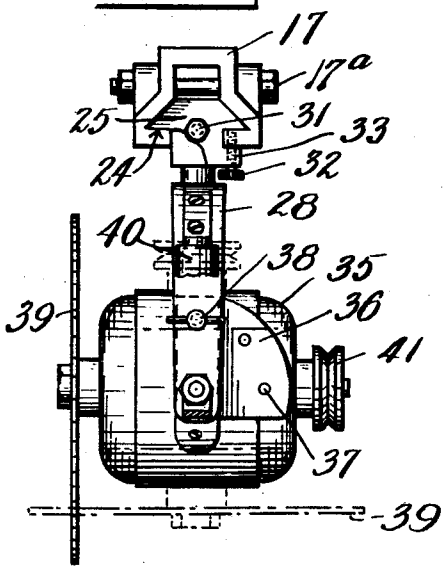


Fig. 5.

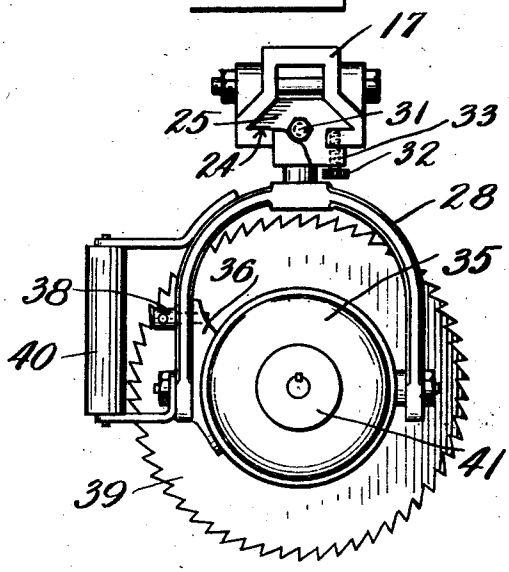


Fig. 6.

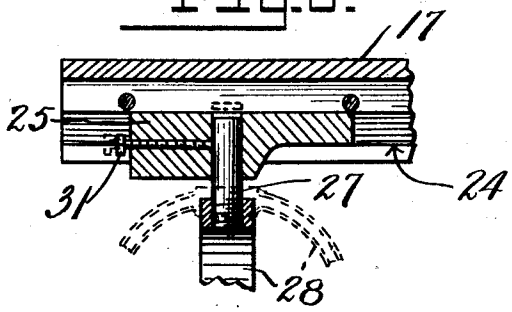


Fig. 7.

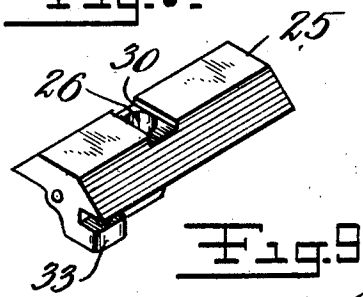
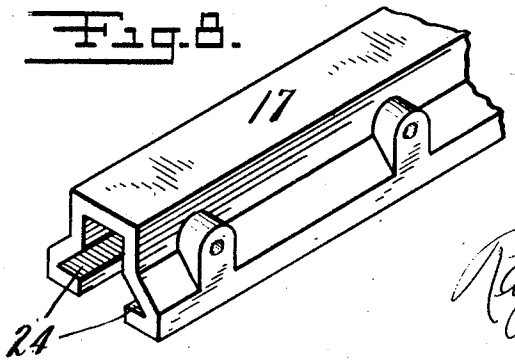


Fig. 9



Fig. 8.



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UNITED STATES PATENT OFFICE.

RAYMOND E. DE WALT, OF BRIDGETON, NEW JERSEY.

WOODWORKING MACHINERY.

Application filed January 27, 1923. Serial No. 615,195.

To all whom it may concern:

Be it known that I, RAYMOND E. DE WALT, a citizen of the United States, residing at Bridgeton, in the county of Cumberland and State of New Jersey, have invented certain new and useful Improvements in Woodworking Machinery, of which the following is a specification.

This invention relates generally to wood-working machines of the type in which one or more tools can be mounted in different positions to perform a variety of operations.

In the field of wood-working there is a considerable demand for a machine of a universal character that can be quickly adjusted to perform a great many different operations ordinarily performed on as many different machines. The ability to eliminate expensive equipment and perform a wide variety of wood-working operations on a single machine is an important factor in the successful conduct of small, and even medium and large size wood-working shops.

It is the general object of the present invention to provide an improved machine of the type referred to and with this object in view the invention includes a compact organization of structure in which a tool-supporting arm is mounted for vertical adjustment along and angular adjustment about a base pedestal that can be attached to a work bench adjacent its rear edge and close to a wall. The horizontal out-standing arm is provided with an internal track or slideway to receive a yoke which can be locked in any desired position to hold a motor pivotally mounted for precise application of a cutting or other tool at any desired angular application to the work.

In the drawings, in which a preferred form of the invention has been selected for illustration,

Figure 1 is a view in side elevation of a wood-working machine embodying the invention.

Figure 2 is an elevation of the device shown in Figure 1 looking from the right.

Figure 3 is a sectional detail view showing the pivotal connection between a vertical post and a tool supporting arm forming part of the invention.

Figure 4 is a view in side elevation showing a tool-operating motor mounted in two positions in its supporting yoke.

Figure 5 is a view similar to Figure 4 showing the motor and yoke turned at right angles to the position shown in Figure 4.

Figure 6 is a detail view in section showing the construction for locking the yoke stem against rotation in its supporting sliding block.

Figure 7 is a view in perspective of the slidable block which supports the yoke.

Figure 8 is a view similar to Figure 7 showing a portion of the arm and slideway in which the slidable block shown in Figure 7 operates.

Figure 9 is a view in perspective and on an enlarged scale of the yoke stem shown in Figure 6.

Referring to the drawings for a more detailed description of the invention, at 5 is shown a base pedestal that is adapted to be attached to the top 6 of a work bench. A post 7 is adapated to be supported in the pedestal 5 and to extend downwardly through an opening 8 in the bench top 6 in lowered position of the post. A vertical groove 9 in the post is arranged to be engaged by a set screw 10 to hold the post 7 in various positions of vertical adjustment. To change the vertical adjustment of the post 7 a hand crank 11 operates through bevel gears 12 to rotate a screw 13 which has threaded engagement with a lug 14 on the pedestal 5.

The upper extremity of the post 7 is expanded into a flange 15 which has a carefully formed pivotal joint connection with a corresponding flange 16 formed at one end of a horizontally projecting arm 17. In order to increase the accuracy of fit of the two flanges to each other their confronting faces are provided with a circular and concentric projecting area 18 fitting into a correspondingly formed depression 19, while a post 20 set in the end of the post 7 forms a pintle pin about which the arm 17 may have swinging pivotal movement. A suitable nut 21 may be employed to lock the arm 17 in any desired angular position on the post 7.

For convenience in setting the arm 17 at the desired angular position the periphery of one or other of the flanges 15 or 16 may be calibrated, as at 22, for cooperation with a fixed reference mark 23.

The arm 17 is grooved out throughout its length to provide a pair of inwardly extending track or slideways 24 and the

groove and slideways receive and fit the contour of a slide block 25 having a frusto-conical formation in cross-section.

The slide block 25 is provided at a central portion with a round opening or perforation 26 to receive a bolt 27 forming a support or stem for a yoke member 28. The stem 27 has a square head member 29 adapted to be received in a transverse groove 30 in the upper surface of the slide block to prevent rotation of the stem about its axis. A set screw 31 carried by the slide block is used to lock the bolt or stem 27 rigidly in position.

In order to change the angular adjustment of the bolt 27 and yoke 28, the bolt is lifted until its head clears the top of the slide block, as in dotted lines in Figure 6, when the yoke may be rotated and again lowered to be held against angular movement by the engagement of the bolt head with the groove 30 in the slide block.

It will be seen that the slide block 25 may be moved along the slideways 24 in the arm 17 to any desired position and locked in the selected position by means of a set screw 32 having threaded engagement with a lug 33 on the slide block and adapted to bear against the lower surface of one of the slideways 24, or by means of the pinch bolts 17ª extending across the upper part of the slideway and forming screw means for squeezing the separated sides of the arm together against the slide block.

The yoke 28, to which reference has been made, supports between its arms a small electric motor 35. The casing of the motor is pivotally mounted in the yoke and preferably carries a quadrant member 36 provided with three or more holes 37 adapted to be engaged by a pin or bolt 38 carried by the yoke. By this arrangement the motor can be mounted in different positions, as indicated in Figure 4 of the drawings, to hold a tool such as a saw 39 in a horizontal, a vertical, or in an oblique position to suit the requirements of the work. Further adjustments can be obtained by rotating the yoke in its seat in the slide block 25 in a manner already described and indicated in Figure 5 of the drawings.

It will be seen that a great number and variety of positions of the operating tool can be provided by means of the various adjustments described. In addition the slideway provided by the arm 17 furnishes a guide along which the yoke can be moved through the use of the handle 40 to move the tool along directing lines placed in readily discernible positions on the surfaces of the material facing the operator. Different tools can be mounted on either end of the motor spindle or a drive pulley 41 can be provided for a belt drive connection with other devices, not shown, such as a jig saw attachment, a lathe attachment or the like. The machine is compact and simple in construction and handles close work with a high degree of precision and while it has been particularly described in connection with wood-working, it will be clear that it may be equally as well used for other purposes.

What is claimed is:—

1. In a wood-working machine, a hollow pedestal adapted to be attached to a work bench, a post mounted in said hollow pedestal and having a splined connection therewith for vertical non-rotative adjustment, a horizontally extending arm rotatably adjusted on the upper end of the post, a supporting member mounted for adjustment along said arm, and a tool-operating motor adjustably carried by said supporting member.

2. In a wood-working machine, a hollow pedestal adapted to be attached to a work bench, a post mounted in said hollow pedestal and adapted to be vertically adjusted therein, a horizontally extending arm attached at one end to the upper end of the post for angular adjustment thereon in a horizontal plane, a slide block movable along said arm, a yoke depending from said slide block and adjustably supported thereby, and a tool-operating motor pivotally mounted in said yoke.

3. In a wood-working machine, a hollow pedestal adapted to be attached to a work bench, a post mounted in said hollow pedestal and adapted to be vertically adjusted therein, a horizontally extending arm attached at one end to the upper end of the post for angular adjustment in a horizontal plane thereon, a slide block movable along said arm, means for locking the slide block in fixed position, a yoke depending from said slide block and adapted to have its angular position varied, and a tool-operating motor pivotally mounted in the yoke.

4. In a wood-working machine, a vertically adjustable post provided with means for securing the same at different elevations, a swinging arm pivoted to said post for swinging in a substantially horizontal plane, a tool carrying block slidably mounted on said arm, and a tool carrying motor supported by said block and adapted to be adjusted about a vertical axis and swingable about an axis substantially normal to said vertical axis and means to secure said motor in adjusted position.

5. In a machine of the character disclosed, a horizontally swinging arm having a slideway groove extending longitudinally of the same and open at the bottom, a slide block in said slideway, a yoke having a stem, said stem interlockingly engaged with said slide block to afford different angularly adjusted positions in the slide block and operating through the open slideway and a tool

carrying motor adjustable in different angular relations in said yoke.

6. The structure of claim 5 in which the stem is vertically slidable in the block and has an angular portion engageable in a correspondingly angular seat in the block.

7. In a machine of the character disclosed, a short hollow pedestal having a wide flat base adapting the same to be secured upon a work bench, a post having a vertically adjustable mounting in said pedestal, a horizontally swinging arm pivotally secured on the upper end of said vertically adjustable post and held in different angularly outstanding relations thereon, said arm having a longitudinal guideway in the under side of the same, a carriage operating in said guideway and a tool operating motor carried by the carriage.

8. In a machine of the character disclosed, a horizontally swinging arm having a longitudinal slideway with a slot open to the bottom of the arm, a block engaged in said slideway and carrying a part projecting down through the slot, a screw for compressing the separated side portions of the arm against the slide block for securing the same in adjusted relation and a tool operating motor adjustably carried by the part which projects down through the slot in the laterally swinging arm.

9. In a machine of the character disclosed, a vertically adjustable post, a horizontally swinging arm pivoted on the upper end of said post, means for securing said arm in different angularly adjusted relations, said arm having spaced sides with a trackway therebetween, a carriage adjustable along said trackway, screw means for clamping the sides of the arm against the carriage to secure the same in variously adjusted relations and a tool operating motor supported by the carriage and adjustable about vertical and horizontal axes.

10. In a machine of the character disclosed, a tool operating motor, a carriage in which said motor is supported for different angular positions, said carriage comprising a slide block of frusto conical cross section, a slideway having ledges for engagement beneath the base of the slide block and overstanding inwardly inclined members for bearing on the frusto conical inclined sides of the slide and means for pinching the sides of the trackway together to grip the frusto conical slide block.

11. In a machine of the character disclosed, a tool operating motor, a carriage in which said motor is supported for different angular positions, said carriage comprising a slide block of frusto conical cross section, a slideway having ledges for engagement beneath the base of the slide block and overstanding inwardly inclined members for bearing on the frusto conical inclined sides of the slide and means for pinching the sides of the trackway together to grip the frusto conical slide block, said slide block having a transverse seat in the top of the same and the adjustment of the motor about a vertical axis being effected by a bolt extending up through the slide block and having a transversely extending head engageable in different angular relations in said seat.

12. In a machine of the character disclosed, a tool operating motor, a yoke in which said motor is angularly adjustable about a horizontal axis, said yoke having a supporting bolt provided with an elongated head, an adjustable carriage having a seat for the head of the supporting bolt constituting means for securing the bolt in a variety of angularly adjusted positions in said seat.

In testimony whereof I affix my signature in presence of two witnesses.

RAYMOND E. DE WALT.

Witnesses:
IRVING H. BONHAM,
PHILIP S. DUFFIELD.