

Mar. 3, 1925.

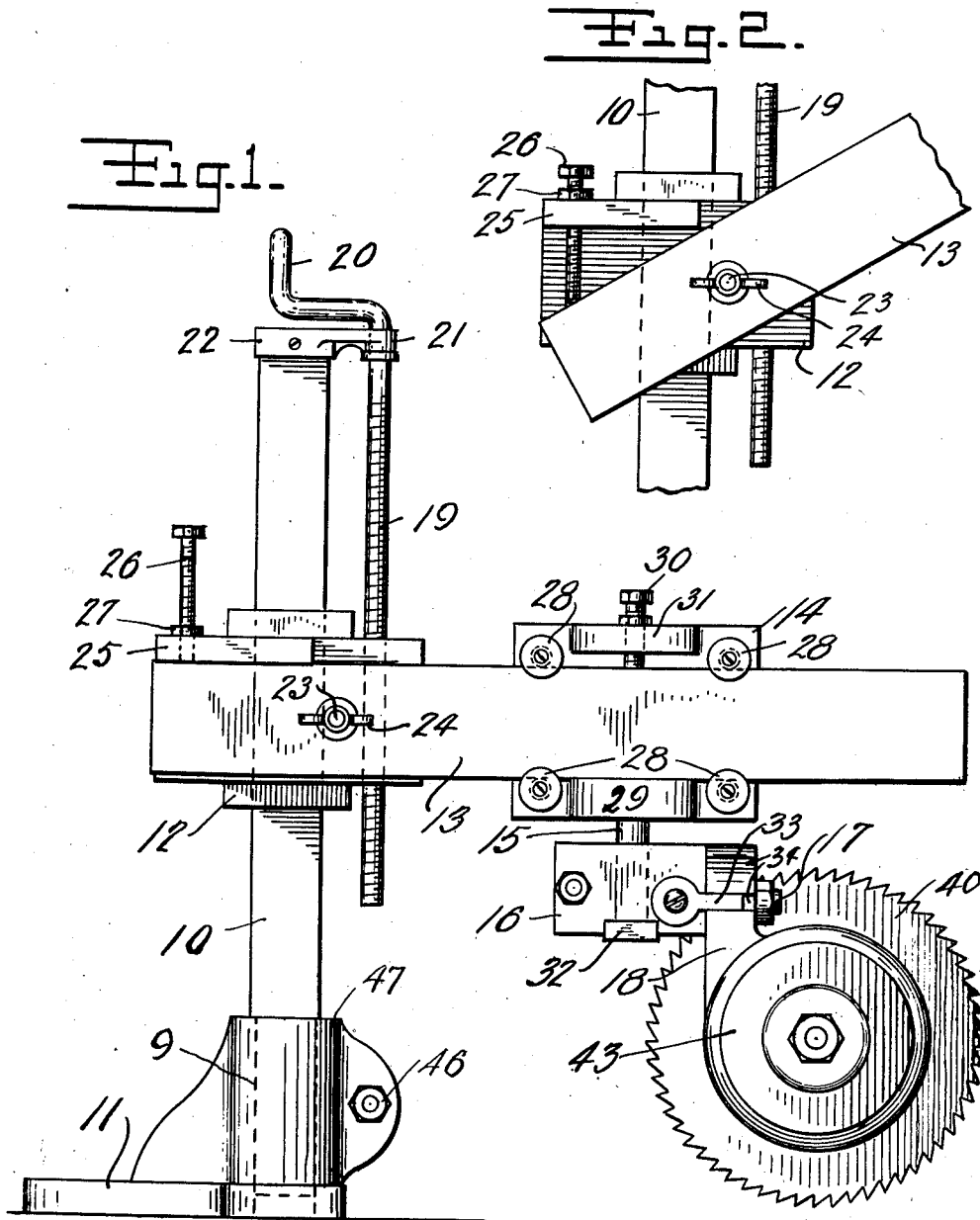
R. E. DE WALT

1,528,535

TOOL HOLDER

Filed Sept. 27, 1921

3 Sheets-Sheet 1



Raymond E. De Walt <sup>Inventor</sup>  
By his Attorney  
Frank J. Hunt

Mar. 3, 1925.

R. E. DE WALT

1,528,535

TOOL HOLDER

Filed Sept. 27, 1921

3 Sheets-Sheet 2

Fig. 3.

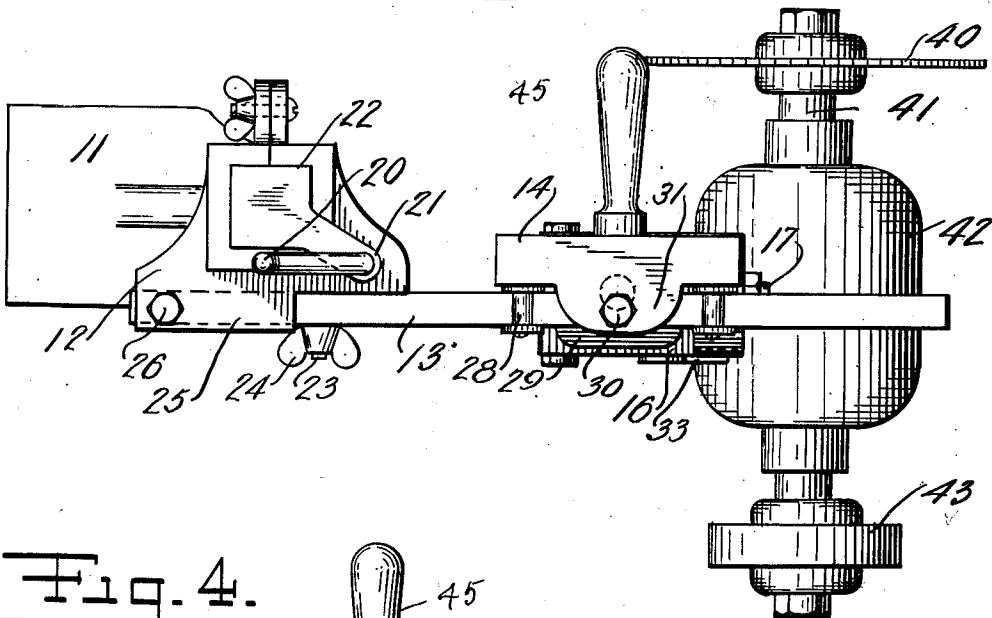
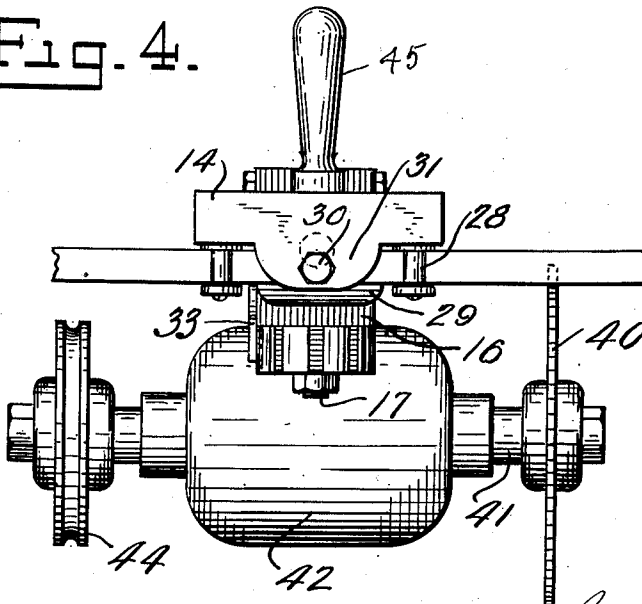


Fig. 4.



Inventor  
By *Raymond E. Walt*  
Attorney  
*Frank Went*

Mar. 3, 1925.

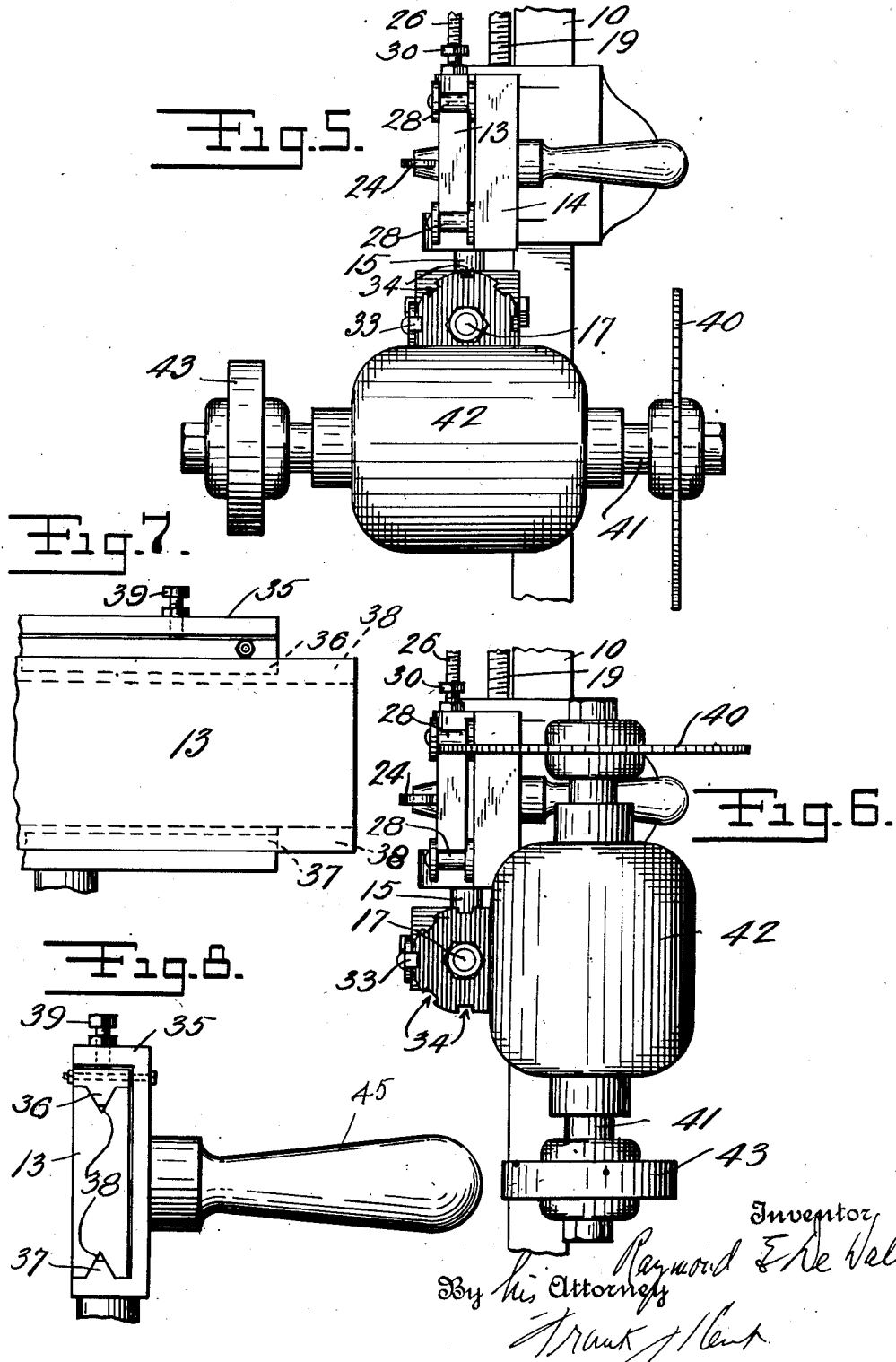
1,528,535

R. E. DE WALT

TOOL HOLDER.

Filed Sept. 27, 1921

3 Sheets-Sheet 3



## UNITED STATES PATENT OFFICE.

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

## TOOL HOLDER.

Application filed September 27, 1921. Serial No. 503,581.

*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 Tool Holders, of which the following is a specification.

This invention relates to tool holders of the general type in which the tool or other operating member is mechanically supported for operation in a plurality of positions.

The principal objects of the invention are to greatly increase the number of possible operating positions in which a tool supported by the device can be placed, and to improve generally the flexibility, scope, and efficiency of such devices.

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

Figure 1 is a view in side elevation of a tool supporting device embodying the invention.

Figure 2 is a detail of the device shown in Figure 1, showing one of the many possible adjustments that may be made.

Figure 3 is a plan view of the device shown in Figure 1.

Figure 4 is a plan view of a portion of the device showing the tool mounted substantially at right angles to the position shown in Figure 3.

Figure 5 is an end view of the right hand end of a portion of the device shown in Figure 1.

Figure 6 is a view similar to Figure 5 and showing the tool turned about a horizontal axis to a position substantially at right angles to that shown in Figure 5.

Figures 7 and 8 are side and end views, respectively, of a modified mount for a tool supporting carriage included in the invention.

Referring to the drawings, an upright standard or post 10 having for the greater portion of its length a square or other non-circular formation in cross-section, has a rounded reduced end 9 pivotally mounted in a supporting base 11 and is encircled by an arm supporting member 12 which has vertical sliding engagement with the post 10. An arm 13 is mounted at one end on the member 12 and extends laterally

away from the post 10 and in overhanging or other operable relation to the work.

The laterally extending arm 13 provides a supporting track or runway for a carriage 14 which is provided with a downwardly extending bolt or pivot pin 15 on which a block 16 is mounted, the block 16 being in turn provided with a pintle or pivot pin 17 on which a bracket arm 18 projecting from the framework of the tool or other operating member, is directly mounted.

The general organization of structure thus provided, that is, the vertical standard or post, bearing a laterally extending arm supporting a movable carriage upon which is mounted the tool supporting member, is susceptible of a wide range of adjustability of position of the tool in operation.

Among the structural features through which adjustability is obtained is the provision for vertical adjustment of the arm 13 along the post 10. This is provided by mounting the arm supporting member 12 to have sliding engagement with the post, upward or downward adjustment of the member 12 along the post being brought about by rotation of the adjusting screw 19 through the handle 20. The screw 19 is journaled in an extension 21 of a cap member 22 on the upper end of the post 10 and is prevented by any convenient means from moving longitudinally in the seat. The screw passes through and has threaded engagement with the arm supporting member 12 so that rotation of the screw produces upward or downward movement of the arm supporting member 12 along the post 10 as will be clear.

Not only can the arm 13 be bodily raised or lowered as described, but it can also be tilted vertically at various inclinations about a pivotal point in the arm supporting member 12. This is accomplished by mounting the arm on the pivot pin 23 projecting from a lateral face of the arm supporting member 12, the arm being held in place on the pin by means of the wing nut 24. Preferably a laterally extending flange 25 on the member 12 acts as an abutment member against which the upper edge of the left-hand extremity of the arm rests when the arm is in a substantially horizontal position as shown in Figure 1. In order to hold the arm 13 in a relatively inclined

position as indicated in Figure 2, an adjusting screw 26 is threaded through the flange 25 and is adapted to bear against the upper edge of the arm to hold the arm at the desired inclination. A lock nut 27 holds the screw against accidental movement in an obvious manner.

In order to provide for movement of the carriage 14 along the bar or arm 13 for lateral positioning of the tool holder 18, the carriage is provided with flanged rollers 28 which engage respectively the upper and lower edges of the bar and guide the carriage in a straight-line path of movement along the bar. An elongated laterally projecting lug 29 on the carriage engages the lower edge of the bar and assists in holding the carriage in immovable relation, when desired, with the bar when a stop screw 30 mounted in a lug 31 is brought into engagement with the upper edge of the bar. A handle member 45 provides for manually manipulating the carriage 14.

In order to provide for turning the block 16 and the holder 18 about a vertical axis and maintaining the orientation or position of the block, sufficient clearance is provided between the lower edge of the carriage 14 and the upper side of the block to provide for lifting and sliding the block along the bolt 15 to bring about disengagement of the rectangular head 32 of the bolt 15 with a correspondingly shaped notch formed in the bottom of the block. The block 16 can therefore be rotated about the bolt 15, as from the position shown in Figure 3 of the drawing to that shown in Figure 4, when the block is lowered to bring the notch in the lower face thereof into non-rotating engagement with the bolt head 32. While the bolt head 32 shown in the drawing has four sides which correspondingly limit the number of angular positions in which the tool holder can be placed, it will be clear that the number of lateral faces of the bolt head and the corresponding notch in the carriage can be increased to any desired extent to thereby increase the number of operating positions for the tool holder.

Still another condition of adjustment of the tool holder is provided by the pivotal mounting of the tool holder bracket arm 18 on the pin 17 projecting horizontally from the block 14. This provides for the adjustment of the tool holder about a horizontal axis as from the position shown in Figure 5 to that shown in Figure 6. A latching member 33 carried by the block 16 may be placed in engagement with any one of the notches 34 in the end of the bracket arm 18 to hold the arm in the desired position.

In Figures 7 and 8 of the drawing a modified form of carriage 35 is provided for

cooperation with the bar 13. In this form the carriage is provided with V-shaped glideway lugs 36 and 37 which slide in correspondingly formed grooves 38 formed in the upper and lower edges of the bar. The lugs 36 and 37 take the place of the flanged rollers 28 in Figure 1 and serve the same purpose. Preferably the upper lug 36 is separable from the body portion of the carriage and arranged to be wedged into the corresponding groove to lock the carriage, through the action of the screw 39.

It will be seen that a holding device has been provided by means of which any suitable tool such as the rotatable saw 40, can be placed for operation in any one of an exceedingly large number of positions, either for movement of the saw with relation to the work held in a stationary position, or for movement of the work with the saw held in a stationary position.

The saw or other rotatable tool may be mounted on one end of a shaft 41 attached to the rotor of an electric motor 42 by which the shaft is rotated. On the other end of the shaft there may be mounted in balancing relation to the saw member 40, a tool holder 43 or a grooved pulley 44 which may serve as a driving means for the shaft 41 in lieu of the motor 42.

It will also be clear that the post 10 may itself be angularly adjusted or rotated in its seat in the base member 11, this being effected by manipulation of the clamping bolt 46 passing through the two ears of the split socket 47 forming part of the base member. The adjustment thereby provided permits the working tool to be supported in any position about the post 10 and also permits the tool to be drawn through or across the material being worked, at any desired angle.

What is claimed is:

1. In a sawing machine, a pedestal, a post mounted on said pedestal and adapted to rotate about its longitudinal axis, a supporting member slidable on said post, means for maintaining said supporting member in adjusted position relative to said post, an arm pivotally mounted in said supporting member for movement in a plane substantially coincident with the longitudinal axis of said post, means carried by the supporting member to fix the arm in a predetermined position relative to the work, a carriage adapted to travel along said arm, means operable at will to lock said carriage relatively to said arm, a motor supported by said carriage, and a disk cutter driven by said motor, said motor and cutter being adjustable about an axis substantially at right angles to said arm and rotatable about an axis substantially parallel to said arm and means to lock said motor in adjusted position about said last named axis.

2. In a sawing machine, a pedestal, a post mounted on said pedestal and adapted to rotate about its longitudinal axis, a supporting member slidable on said post, means 5 for maintaining said supporting member in adjusted position relative to said post, an arm pivotally mounted in said supporting member for movement in a plane substantially coincident with the longitudinal axis 10 of said post, means carried by the supporting member to fix the arm in a predetermined position relative to the work, a carriage adapted to travel along said arm, means operable at will to lock said carriage 15 relatively to said arm, a motor supported by said carriage, and a saw driven by said motor, said motor and saw being adjustable about an axis substantially at right angles to said arm and rotatable about an axis 20 substantially parallel to said arm and means to lock said motor in adjusted position about said last named axis.

3. In a machine of the character disclosed, a post, a laterally extending arm carried thereby, a carriage mounted to travel 25 lengthwise of said arm, a tool carrying motor, a supporting member in which said motor is adjustable about a horizontal axis, said member being supported by the carriage, 30 adjustable about a vertical axis and having a vertical movement with respect to the carriage to enable the disengagement of angularly interfitting parts on said member and carriage.

4. In a machine of the character disclosed, a post, a laterally extending arm carried thereby, a carriage mounted to travel 35 lengthwise of said arm, a member supported by said carriage and adjustable about a vertical axis, engaging shoulders for securing the member in adjusted relation, said 40 member having a vertical movement for effecting disengagement of said shoulders when the member is to be adjusted about the vertical axis and a tool operating motor 45 carried by the adjustable member.

5. In a tool holder, a laterally extending arm supported to swing about a vertical axis, a carriage adjustable along said arm, 50 with means for securing the same in variously adjusted positions thereon, a supporting member pivotally mounted on said carriage for angular adjustment about a vertical axis, an interlock between the supporting member and its pivotal connection 55 for securing said member in various angularly adjusted relations, a tool operating motor mounted on said supporting member for angular adjustment about a horizontal axis and a latching member carried by the 60 supporting member and adapted for co-action with the tool operating motor for securing said tool operating motor in various angularly adjusted positions.

In testimony whereof I affix my signature. 65

RAYMOND E. DE WALT.