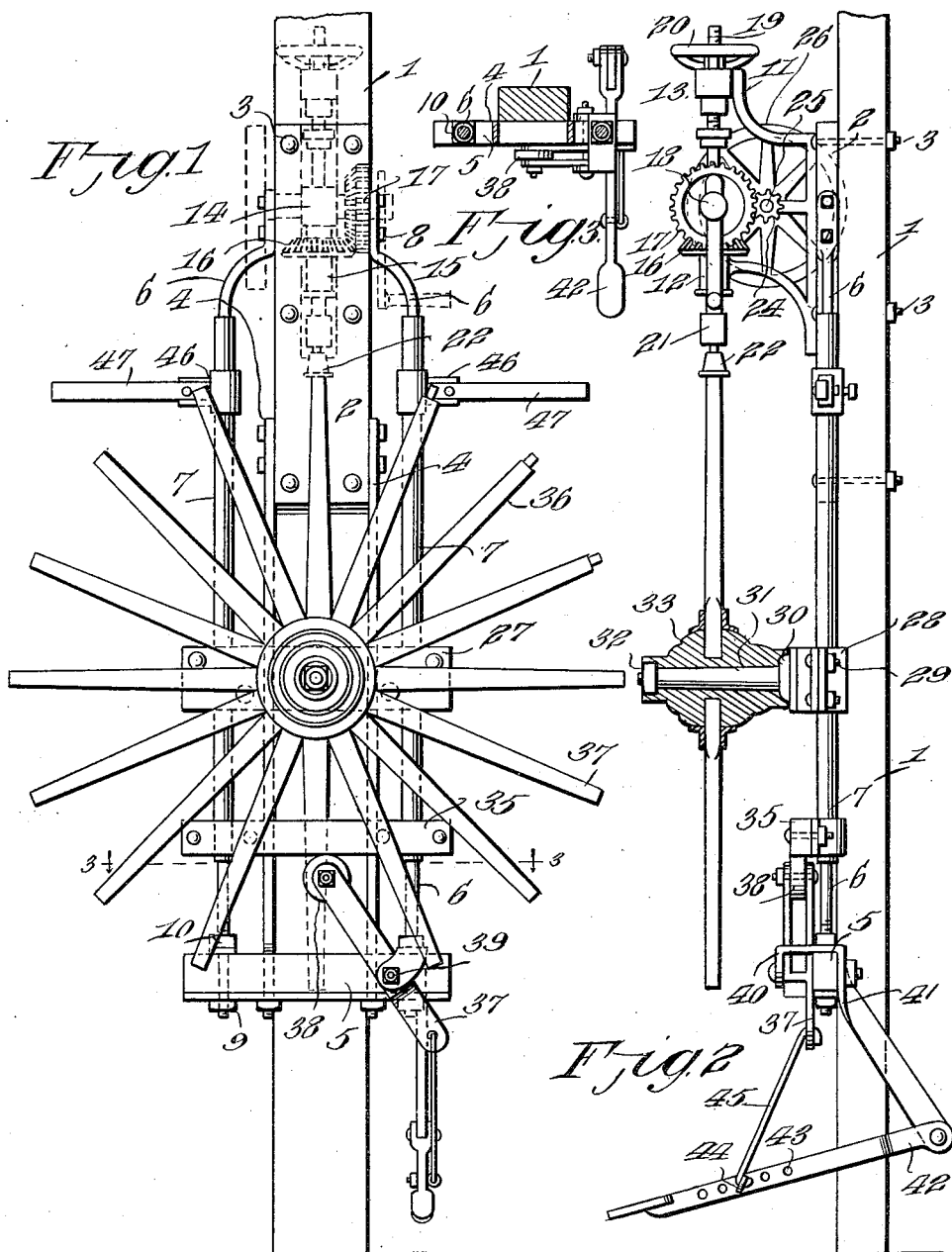


T. D. HICKMAN.
BLACKSMITH'S POST DRILL ATTACHMENT.
APPLICATION FILED JULY 1, 1911.

1,033,695.

Patented July 23, 1912.

2 SHEETS-SHEET 1.



Witnesses
Frank Hough
Edmundson

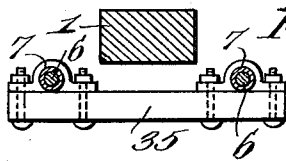
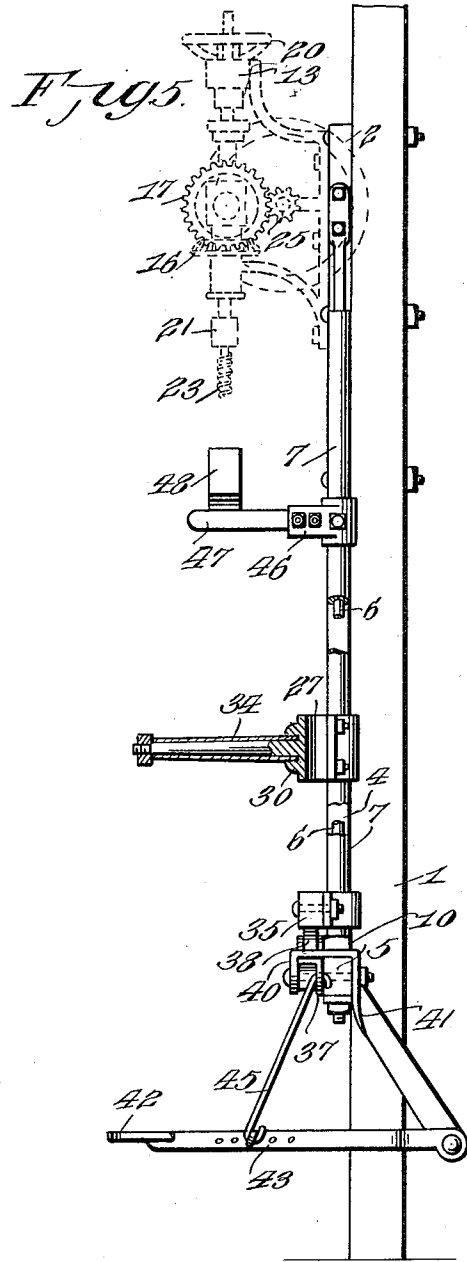
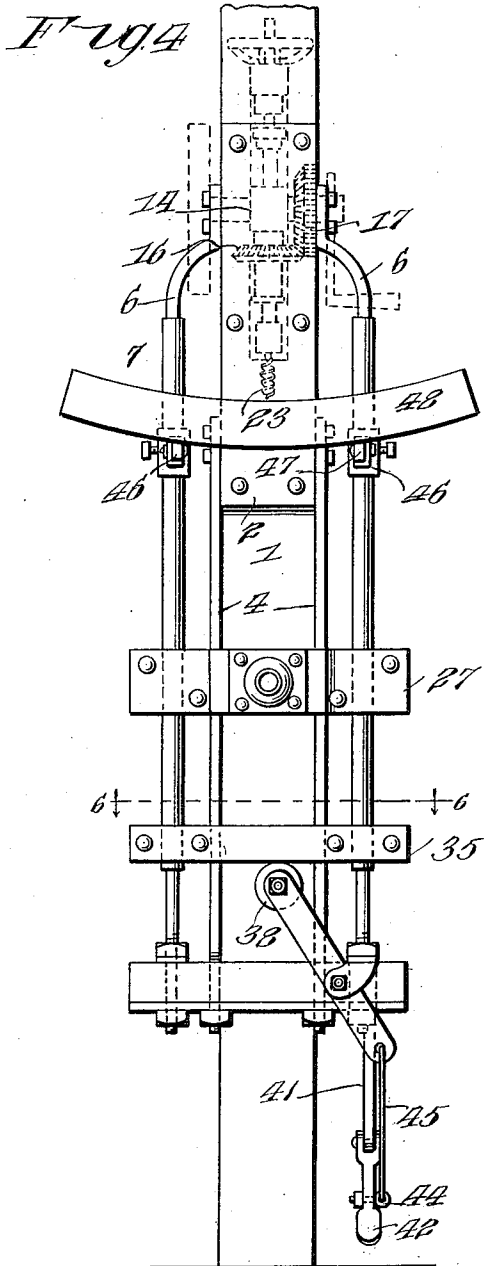
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UNITED STATES PATENT OFFICE.

THOMAS D. HICKMAN, OF SHELDON, MISSOURI.

BLACKSMITH'S-POST-DRILL ATTACHMENT.

1,033,695.

Specification of Letters Patent.

Patented July 23, 1912.

Application filed July 1, 1911. Serial No. 636,347.

To all whom it may concern:

Be it known that I, THOMAS D. HICKMAN, a citizen of the United States, residing at Sheldon, in the county of Vernon and State of Missouri, have invented new and useful Improvements in Blacksmiths'-Post-Drill Attachments, of which the following is a specification.

This invention relates to drills and more particularly to blacksmiths' post drills for forming the tenons upon the ends of wheel spokes and for drilling holes for the reception of the tenons in fellyes.

One of the principal objects of the invention is the provision of a simple and efficient device of this character which is attached to a support in such a manner that the support and drill mechanism may be conveniently placed upon or removed from a support or upright, such as a post running from floor to ceiling or the like.

A further object of the invention is the provision of a novel work support which is slidably mounted upon guides, provision being made for raising and lowering the work support by the foot so that the work is carried into engagement with the drill or tenon former.

Further objects of the invention will appear as the following specific description is read in connection with the accompanying drawings, which form a part of this application, and in which:—

Figure 1 is a front elevation showing the device operated to carry a wheel spoke into engagement with the tenon forming bit. Fig. 2 is a side elevation with parts in section. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is an elevation similar to Fig. 1 showing the device operating upon the wheel or felly. Fig. 5 is a side elevation of the same with parts in section. Fig. 6 is a detail sectional view on the line 6—6 of Fig. 4.

Referring more particularly to the drawings, 1 represents a post or support which may extend from the floor to the ceiling or which may be secured to the floor and project a sufficient height thereabove to secure the drill mechanism thereto.

Generally speaking this drill mechanism comprises a drill which may be either power or hand operated, a work support or carrier, foot operated means for elevating or carrying the work support toward and away from the drill and a supporting device which carries the drill, a work support and work

support operating means. It will therefore be seen that the entire device may be removed as a unit from the upright or post 1 without disassembling. The support for the mechanism is shown at 2 as comprising a plate which is secured to the upright 1 by means of the bolts 3 so that it may be removed at any time. Depending from the plate 2 are supporting arms 4 which have connected to their lower ends a cross bar 5 which lies against the post 1 but is free therefrom. Connected to the cross bar and to the supporting plate 2 are vertical guide rods 6 upon which tubular supports 7 are mounted. The rods 6 are bolted by through bolts or lag screws to the plate 2 and their lower ends pass through the cross bar 5 and are adjustably connected thereto by means of the nuts 9 and 10. These rods lie parallel to the supporting arms 4 and the tubular supports 7 are slidably mounted thereon, for a purpose to be hereinafter described.

Mounted upon the plate is a drill which comprises a frame 11 having bearings 12, 13 and 14 in which is journaled a shaft 15 which carries a sleeved bevel gear 16 meshing with a similar gear 17 upon a crank shaft 18. The upper end of the shaft 15 is threaded, as shown at 19, to receive the adjusting wheel 20, which is connected to the bearing 13 and is provided with a centrally threaded channel to receive the shaft. The lower end of the shaft 15 is feathered in the gear 16 and at its terminal carries a chuck 21 to receive suitable bits 22 and 23 for forming tenons and drilling holes respectively. The gear 17 also meshes with a pinion 24 carried upon the counter shaft 25, upon whose outer end a fly wheel 26 is secured. The adjusting wheel 20 is only used when the work cannot be moved by the support shifting mechanism far enough for the drill to properly act upon the work.

Extending across the opposite tubes 7 is a mounting plate 27 which is adjustably secured to the tubes by means of the U-shaped clamps 28 and the bolts 29. This plate has a raised base 30 in its center from which projects a spindle 31 having its outer end threaded to receive a nut 32. The spindle is preferably tapered so as to receive the hub 33 of the wheel and is made sufficiently small to receive all sized hubs being built up for larger hubs by means of sleeves 34. At the lower end of the tubes 7 a crosspiece 35 is permanently secured, so as to act as an

abutment for the elevating lever when the spokes 36 are to be brought into position to be acted upon by the bit 22.

The operating lever is shown at 37 and has its outer end bifurcated so as to receive the anti-friction roller 38 which bears upon the under side of the abutment or crosspiece 25. The lever 37 is pivoted upon a bolt 39 between the cross bar 5 and one leg of a yoke-shaped support 40 which straddles the cross bar 5 and has its opposite leg twisted, as shown at 41, and extended diagonally downwardly and away from said cross bar. The lower end of this leg has pivoted to it a foot lever 42 having a plurality of apertures 43 formed therein so as to adjustably receive the eye bolt 44 in which one end of a link 45 is secured. The opposite end of the link is connected to the lower end of the lever 37 so that when the foot lever 42 is depressed the lever 37 will be operated and the tubes 7 raised upon the guide rods 6 and the wheel brought into position for the bit 22 to engage one of the spokes.

Adjustably mounted upon the tubes 7 are brackets 46 which carry supporting arms 47 upon which the felly 48 of the wheel may be supported. These arms may be turned out of the way when the device is used for forming tenons upon the ends of the spokes and may be turned into operative position, as shown in Figs. 4 and 5 when it is desired to drill the tenon holes in the felly. The application of the device is as before described.

It is stated that the bar 5 is adjustable on the rod 6. In view thereof sliding adjustment of the bar can be made. Adjustment of the bar 5, together with adjustment of the link 45 in the required aperture in the lever 4 will permit the operator to regulate the throw of the lever 37 whereby very fine adjustments of the work support can be effected.

Having thus described the invention, what I claim as new is:—

1. Apparatus of the character described comprising a post, a plate secured to said post, parallel rods secured at their upper ends to the sides of the plate, the lower ends of said rods being threaded, a bar adjustably mounted on the lower ends of said rods, means engaging against the opposite sides of said bar and adjustable on the threaded ends of said rods for holding the latter and said bar fixedly connected together, a drill carried by the plate, a work holder movable with relation to the drill and slidable on said rods and provided at its lower end with a cross piece, and means carried by said bar and adjustable thereon and adapted to engage against said cross piece to move the work holder in one direction.

2. Apparatus of the character described

comprising a post, a plate secured to said post, parallel rods secured at their upper ends to the sides of the plate, the lower ends of said rods being threaded, a bar adjustably mounted on the lower ends of said rods, means engaging against the opposite sides of said bar and adjustable on the threaded ends of said rods for holding the latter and said bar fixedly connected together, a drill carried by the plate, a work holder movable with relation to the drill and slidable on said rods and provided at its lower end with a cross piece, a yoke secured to the bar, a lever pivoted to the yoke beneath the bar and provided with longitudinal series of apertures, a second lever pivoted to the yoke and having a portion bearing beneath the said cross piece so as to move the work holder in one direction when the second lever is operated, and a link pivoted at one end to the second lever and having means at its opposite end adapted for interchangeable engagement in the apertures in the first lever whereby the throw of the second lever can be regulated to control the adjustment in one direction of the work holder.

3. Apparatus of the character described comprising a post, a plate secured to said post, parallel rods secured at their upper ends to the sides of the plate, the lower ends of said rods being threaded, a bar adjustably mounted on the lower ends of said rods, means engaging against the opposite sides of said bar and adjustable on the threaded ends of said rods for holding the latter and said bar fixedly connected together, a drill carried by the plate, a work holder movable with relation to the drill and slidable on said rods and provided at its lower end with a cross piece, a yoke secured to the bar, a lever pivoted to the yoke beneath the bar and provided with longitudinal series of apertures, a second lever pivoted to the yoke and having a portion bearing beneath the said cross piece so as to move the work holder in one direction when the second lever is operated, and a link pivoted at one end to the second lever and having means at its opposite end adapted for interchangeable engagement in the apertures in the first lever whereby the throw of the second lever can be regulated to control the adjustment in one direction of the work holder, the said work support comprising a pair of tubes through which the said rods extend, and a hub mounting device adjustably connected with said tubes.

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

THOMAS D. HICKMAN.

Witnesses:

G. F. TUCKER,
GEO. T. TYREE.