

(No Model.)

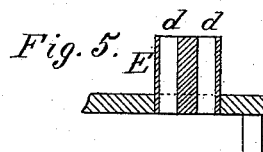
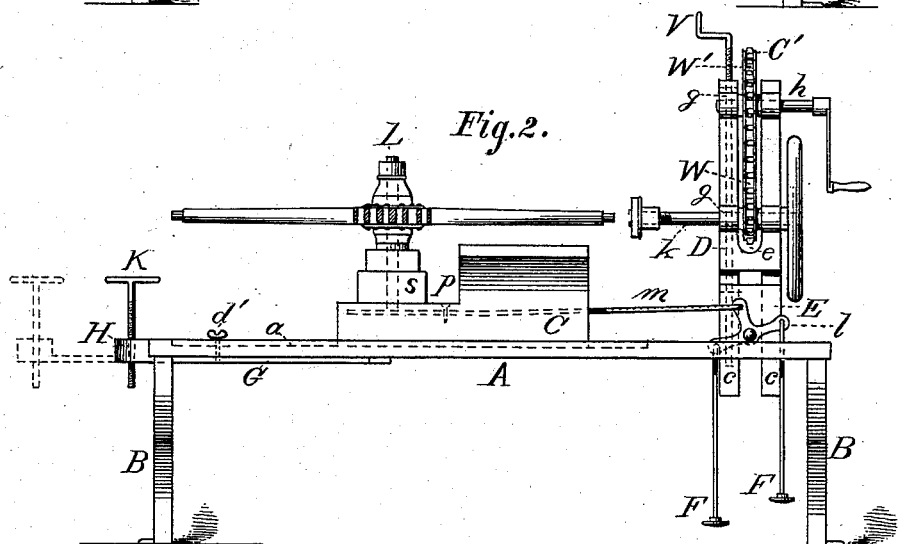
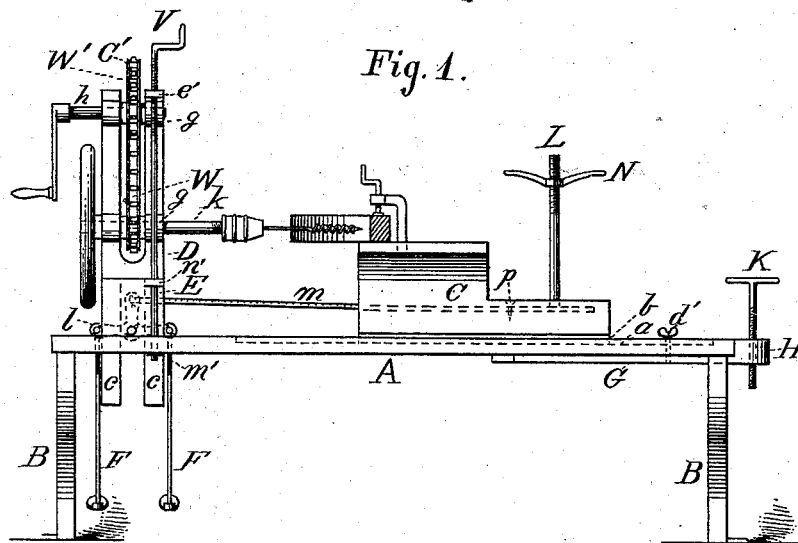
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C. A. HODGE.

## BORING AND TENONING MACHINE.

No. 263,702.

Patented Sept. 5, 1882.



Witnesses  
Villette Anderson.  
Philip Lemasi.

Inventor  
Chester A. Hodge.  
By Anderson Smith  
his Attorneys

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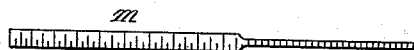
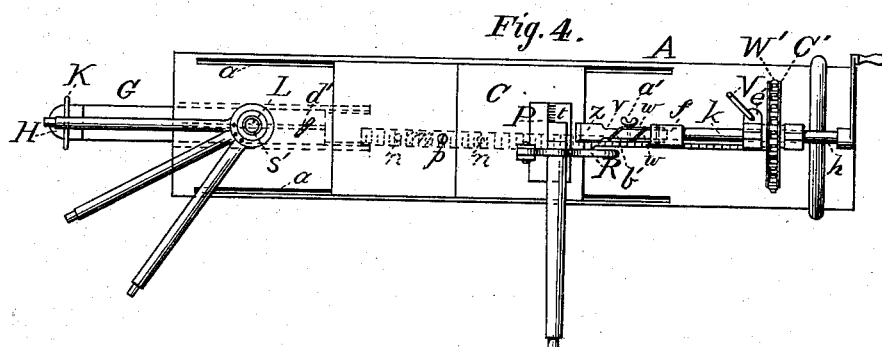
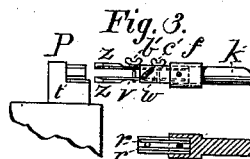
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Philip Lettasi.

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Chester A. Hodge,  
by Anderson & Smith  
his Attorneys.

# UNITED STATES PATENT OFFICE.

CHESTER A. HODGE, OF BELOIT, WISCONSIN.

## BORING AND TENONING MACHINE.

SPECIFICATION forming part of Letters Patent No. 263,702, dated September 5, 1882.

Application filed April 1, 1882. (No model.)

*To all whom it may concern:*

Be it know that I, CHESTER A. HODGE, a citizen of the United States, and a resident of Beloit, in the county of Rock and State of Wisconsin, have invented a new and valuable Improvement in Boring and Tenoning Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view of this invention. Fig. 2 is a view of the opposite side. Fig. 3 represents details. Fig. 4 is a plan view. Fig. 5 is a detail section.

This invention has relation to boring and tenoning machines; and it consists in the construction and novel arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claims appended.

In the accompanying drawings, the letter A designates the main bench, and B its legs or supports. Lateral slots or grooves *a* are made longitudinally in the bench to receive and guide the supports *b* of the slide-table C, to which the work is secured.

D represents an adjustable post or bearing, located near one end of the main bench, and connected thereto by means of sliding projections *c*, which engage grooves or ways *d* in a foot-bearing or upright, E, which is firmly secured to the bench. The post is vertically slotted at *e*, and is provided with transverse bearings *g* for the driving-shaft *h* and the shaft *k*, to which the hollow auger or boring-bit is attached.

Pivoted to the upright E is a T-lever, *l*, to the lateral arms of which are connected treadles F.

To the upright arm of the lever is pivoted a connecting-rod, *m*, which is flat in form, and is perforated at quarter-inch distances or less along its length, as indicated at *n*. This rod extends under the work-table C, and is connected thereto by means of a pin, *p*, which passes through a bearing in said table into one of the perforations *n* of the rod, this perforation being determined by the depth of boring action required. In this manner the slide-table is easily adjusted, so that the boring or tenoning operation will be continued to the exact

distance required. The connecting-rod *m* is graduated.

In a groove bearing on the under side of the main bench, extending longitudinally to its end, is arranged a slide, G, which carries in its head H an adjustable rest, K, for the wheel-spoke.

L represents a threaded post or center fastening, on which the hub of the wheel is placed, being secured thereto by means of a lever-nut, N. This center fastening is adjustable, being sometimes secured in a bearing, *s*, in the work-slide C, and sometimes in a bearing, *s'*, in the main bench nearer the spoke-rest. In the latter position it is used chiefly for securing the hub when the spokes are to be driven into the same, and the slide of the spoke-rest enables the latter to be moved outward from the end of the bench into proper position to support the spoke with relation to the center fastening.

In jointing an angularly-recessed back block, P, is employed, the same being secured to the work-table by any ordinary clamping device. In the bearing-angle *t* of the back block the end of the spoke is laid and secured by means of a clamping-lever, R, which is pivoted to the back of the block, and is brought forward over the spoke, as indicated in the drawings.

The jointing-knives *z z* are parallel, and are held by the edges of their shank portions *v* in grooves *r* of the slides or plates *w*, these being seated in a bearing or head, *f*, which is attached to the end of the shaft *k*. The plates *w* are connected to the head *f* by means of a rivet, and are held in engagement with the edges of the knives by means of a clamp-screw, *a'*. The shanks of the knives are also connected by a clamp-screw, *b'*, and by a second clamp-screw, *c'*, beyond the ends of the holding-plates, which enables the cutting edges of the knives to be adjusted to the exact distance apart required for the thickness of the tenon to be formed. A set-screw, *d'*, serves to fix the position of the slide G of the spoke-rest after it has been adjusted.

V indicates a vertical screw, which is seated in bearings *m'* and *n'*, in connection with the main bench and the upright E or base of the adjustable post, and its threaded portion engages a threaded bearing, *e'*, of said post, as indicated in the drawings. By turning the screw V the post D can readily be raised or

lowered to bring the tool on an exact level with its work.

In operating this machine, which is chiefly designed to be employed in connection with the manufacture of wheels for wagons and carriages, the work is moved horizontally up to the bit, auger, or jointing-knives by means of the treadles, the T-lever, and its rod connected to the work-table. The same devices also enable the operator to remove the work from the tool when finished. The tool-shaft *k* is provided with a sprocket-wheel, *W*, which is connected by means of an endless chain, *C'*, to a sprocket-wheel, *W'*, on the driving-shaft, by turning which the tool-shaft is rotated.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. In a boring and tenoning machine, the

treadles *F* and T-lever *l*, and the perforated adjustable rod *m*, connecting said T-lever to the work-table *C*, substantially as specified.

2. A boring and tenoning machine consisting of a main bench, a horizontally-sliding adjustable work-table thereon, a graduated adjustable rod connecting the table to a treadle-lever, a vertically-adjustable post carrying the driving-shaft, tool-shaft, and connecting gear, and the vertical adjusting-screw in engagement with said post, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

CHESTER A. HODGE.

Witnesses:

JOHN H. FRENCH,  
PARSONS JOHNSON.