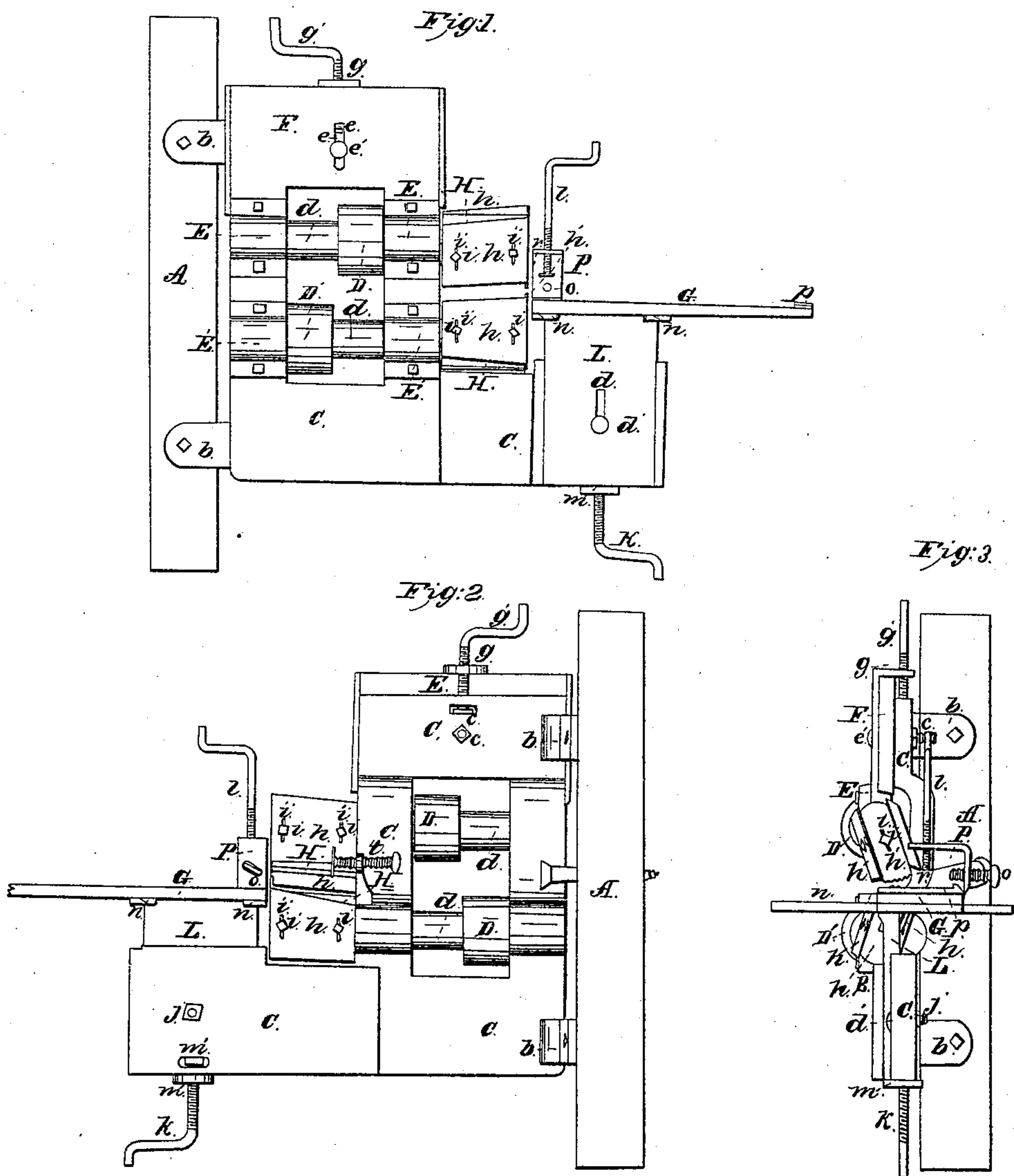


*G. H. Ober,*  
*Tenoning Machine.*  
*N<sup>o</sup> 66,875.                      Patented July 16, 1867.*



*Witnesses:*  
*W. H. Burdette*  
*J. Holmes*

*Inventor:*  
*G. H. Ober.*

# United States Patent Office

G. H. OBER, OF NEWBURY, OHIO.

Letters Patent No. 66,875, dated July 16, 1867.

## IMPROVEMENT IN WHEELWRIGHTS' MACHINES FOR TENONING SPOKES.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, G. H. OBER, of Newbury, in the county of Geauga, and State of Ohio, have invented certain new and useful Improvements in a Spoke-Tenon Machine, &c.; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation of the machine.

Figure 2 is a view of the side opposite from fig. 1.

Figure 3 is an end view.

Like letters of reference refer to like parts in the different views.

A, in the several figures, is a post, to which the machine is secured at *b b*. C is the stationary frame of the machine, to which the operating parts are connected. D D' are pulleys, the shafts *d* of which have their bearings in the frames and boxes E E'. The boxes E' are secured to the stationary frame *c*, and the boxes E to a sliding frame, F, that fits on to the stationary frame, being held in place and allowed to slide up and down by means of a slot, *e*, in the sliding frame, through which a bolt with a head, *e'*, passes, extending through the stationary frame, with a screw and nut, *e*, on the other end, as seen in fig. 2. On top of the frame F, at the middle, is a lug, *g*, through which a hand-screw, *g'*, passes, that enters the top of the frame C, and has a head, *e'*, on the lower end, that, as the screw is turned by the handle, moves the sliding-frame up or down. The ends of the shafts *d*, of the pulleys, after they pass through the bearings, are formed into heads H, on the sides of which are secured blades or cutters *h*, and on the ends saws *h'*, as seen in fig. 3. The cutters and saws are attached to the heads by screw-bolts *i*, passing through slots *i'*, whereby the cutters and saws can be adjusted on the heads as may be desired. The heads are narrow at the end, and incline or widen out toward the shafts, which place the blades in an angling position for the purpose as will be described. G is a sliding-table, that is supported and slides on ways *n*, secured to the top of a sliding-frame, L, which is moved up and down on the frame C by means of a hand-screw, *k*, that passes through a lug, *m*, at the lower end of the slide L and up into the frame C, with a head, *m'*, on the end, that, screwing against the frame, moves the sliding-frame up or down for the purpose of elevating or lowering the table. The slide is held in place on the frame C, and allowed to move up or down by means of a slot, *d*, through which a bolt passes with a head, *d'*, on one end and a screw and nut, *j*, on the other, as shown in figs. 1 and 2. P is a holder, attached to the table at the end next the cutters, in the end of which there is a thumb-screw, *o*, and down through the top extends a hand-screw, *l*, on the lower end of which is a head, *r*, that is turned down on the spoke to hold it in place while the tenon is being cut. At the outer end of the table there is a gauge, *p*, with a lip or nib at one end, against which the spoke is held while the tenon is being cut.

The manner in which this machine, as constructed, operates is as follows: The spoke is placed on the table with the tenon end put in between the saws *h'*, where it is firmly held in the desired position by the set-screw *o* and the hand-screw *l*, as before stated. The saws and cutters are then revolved by the driving power applied to the pulleys D D', and as they turn, the saws cut the shoulders vertically in the spoke, while the blades shave or cut it off horizontally, forming the tenon. The blades are inclined outward or placed angling, so that they will commence cutting at one point and not take a broad cut across the tenon at first, which greatly facilitates the action of the blades. To have the shoulder-cut inclined across the tenon, in order that it will give the proper dish to the wheel, the spoke is placed angling on the table, and the gauge *p* adjusted to suit it, where it is held. The spoke is fed to the cutters in the desired manner by the table being moved laterally on the ways *n n*.

All parts of this machine are adjustable. By means of the sliding-frame F, to which the pulley D is connected, the upper blades can be raised or lowered, and the lower blades are made to have the same relation to the tenon by adjusting the table G up or down by means of the slide L. When the blades are adjusted any number of tenons may be cut the same size and of a uniform depth from the end by means of a gauge-screw, *t*, connected to the frame, against which the end of the spoke is placed. The blades cut obliquely across the tenons, and they can be adjusted up or down by the slots *i'* and bolts *i*, and the saws can be adjusted in the same manner on the blocks as may be desired.

What I claim as my improvement, and desire to secure by Letters Patent, is—

Arranging two cutters upon a frame in such manner that they can be adjusted to cut tenons of different thicknesses, when used in combination with an adjustable table, G, and clamp P, all constructed to operate substantially as described.

G. H. OBER.

Witnesses:

W. H. BURRIDGE,

A. W. McCLELLAND