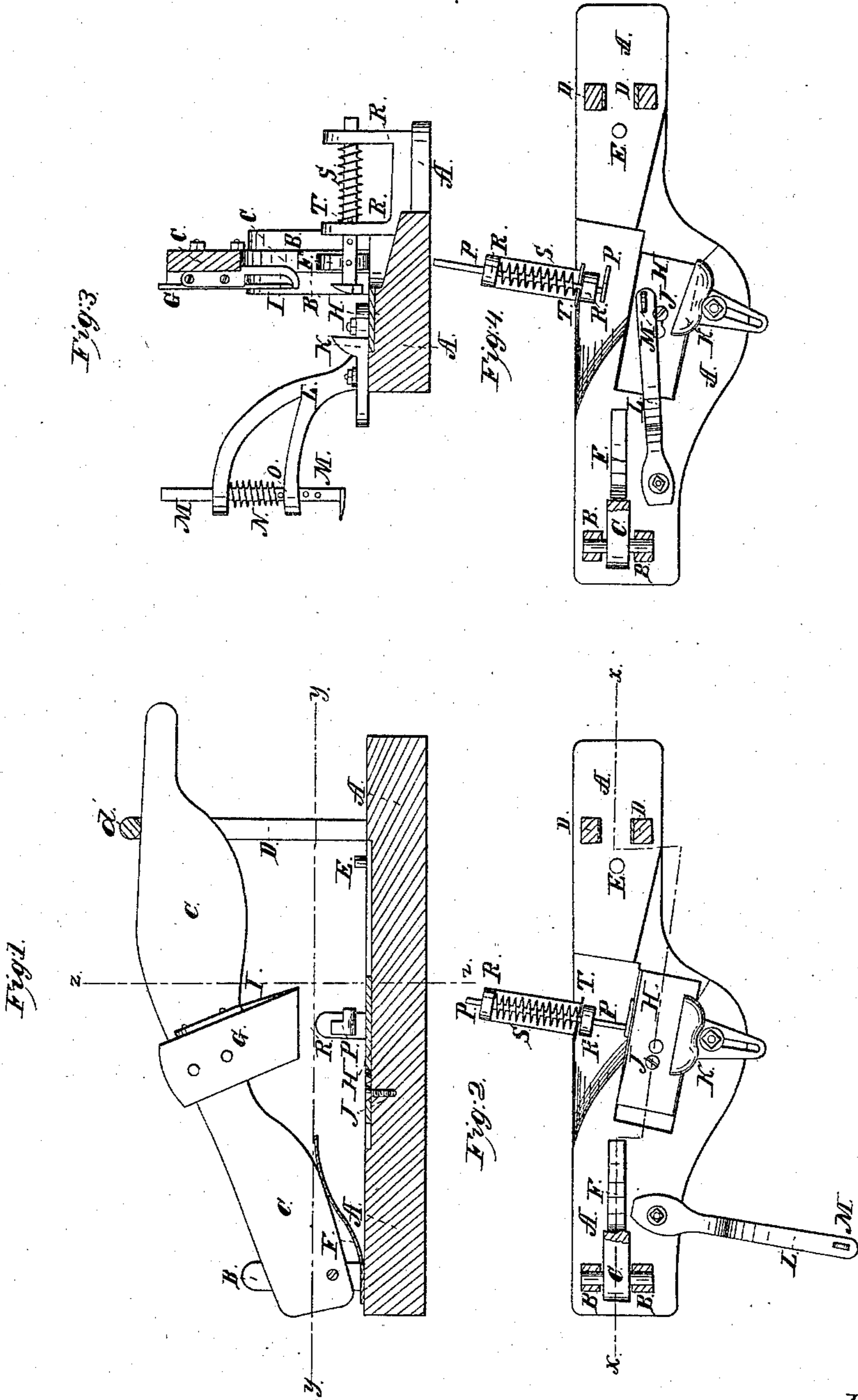


No 57,018.

O. Vanorman,
Tenoning Machine.

Patented Aug. 7, 1866.



Witnesses:
Jas A. Service
W. H. Houghton

Inventor:
O. Vanorman.
Per. M. H. Houghton

UNITED STATES PATENT OFFICE.

OLIVER VANORMAN, OF RIPON, WISCONSIN.

IMPROVEMENT IN MACHINES FOR TENONING SPOKES.

Specification forming part of Letters Patent No. 57,018, dated August 7, 1866.

To all whom it may concern:

Be it known that I, OLIVER VANORMAN, of Ripon, in the county of Fond du Lac and State of Wisconsin, have invented a new and useful Improvement in Spoke-Tenoning Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of my improved machine, partly in section, through the line *x x*, Fig. 2. Fig. 2 is a horizontal section of the same taken through the line *y y*, Fig. 1, the crane being swung out. Fig. 3 is a vertical section of the same taken through the line *z z*, Fig. 1. Fig. 4 is the same view as Fig. 2, the crane being swung in.

Similar letters of reference indicate like parts.

My invention has for its object to furnish an improved machine for thinning and tapering the tenons of carriage-wheel spokes; and it consists, first, in the combination of the knives, lever, spring, adjustable gage, adjustable face-plate, the crane, and adjustable presser-foot with each other and with the bed-piece of the machine, for the purpose of holding and tapering the spokes; and, second, in the combination of the knives, lever, spring, adjustable gage, adjustable face-plate, and adjustable side presser or holder with each other and with the bed-piece of the machine, for the purpose of holding and thinning the spokes, as herein-after more fully described.

A, the bed-piece, which is made in the shape shown in Figs. 2 and 4, is about two feet eight inches long, eight inches wide at the widest part, and four inches thick. The upper central part of this bed-piece A, on the rear side, is cut away to allow the chips to more readily escape.

B are posts or supports attached to the rear end of the bed-piece A, and rising six inches above it, between which is pivoted the rear or lower end of the lever C. The lever C is made in the form shown in Fig. 1, is four feet long and six inches wide at its widest part.

D are guide-posts attached to the forward end of the bed-piece A, between which the for-

ward end of the lever moves up and down in operating. These posts are fourteen inches in height from the top of the bed-piece A, and are connected at their tops by a cross-bar, *d'*, which also acts as a stop to prevent the forward end of the lever from rising too high.

E is a stop upon the upper side of the bed-piece A, which prevents the lever C from descending so far that the knives may come in contact with said bed-piece and be dulled thereby.

The inner sides of the guide-posts D may be lined with metal to prevent wear.

F is a spring, the rear end of which is attached to the bed-piece A, and its forward end presses up against the lower edge of the lever C, and lifts it up after it has been forced down to make a cut.

G is the knife, which is bolted to the side of the lever C in a slightly-inclined position, so that its edge may be in a line with the edge of the face-plate H.

I is a knife set at right angles to the knife G, for cleaning the shoulder of the tenon.

H is the face-plate, which is five inches long, three inches wide, and a quarter of an inch thick. This plate is placed in a groove of the same width as the width of the said plate, but longer, so that the plate may have a longitudinal adjustment. The face-plate H is secured in the groove in the bed-piece A by a screw, J, passing through holes in the said face-plate and screwing into the bed-piece A, as shown in Fig. 1. There are two holes through the face-plate H, for the reception of the screw J, which holes are connected by a slot, as shown, of sufficient width to allow the body of the screw to pass from one hole to the other. This construction allows the face-plate to be adjusted in either of two positions for the purpose hereinafter mentioned.

K is a slide or gage secured to the side of the bed-piece A by a bolt and nut, so that it may be clamped in any desired position.

L is a crane, which is pivoted to the bed-piece A by a bolt and nut, so that it may be clamped in any desired position. The upper part of the crane is divided into two branches, through the ends of which pass the shank of the presser-foot M, as shown in Fig. 3.

N is a spring coiled around the shank of the

presser-foot M, between the arms of the crane L, the upper end of which rests against the under side of the upper arm of the said crane and its lower end upon a pin, O, passing through the shank of the presser-foot. This pin, when the crane is not in use, rests upon the upper side of the lower arm of the said crane, and prevents the presser-foot M from dropping down too far. Several holes are made through the shank of the presser-foot M, so that it may be adjusted to the thickness of the various spokes to be tapered.

P is a presser, to be used when thinning the spoke-tenons. This side-presser is supported by and works in supports R, attached to the bed-piece A, and is held forward against the spokes by the coiled spring S, the rear end of which rests against the rear support, R, and the front end against the pin T, passing through the shank of the side-presser P. This pin T also prevents the side-presser from passing so far forward as to be in the way of the knife G.

In using the machine for thinning the spoke-tenons the crane L is not used, but is swung to the left out of the way, as shown in Fig. 2. The face-plate H is moved into and secured in the position shown in Fig. 2. The slide-gage K is then adjusted according to the size of the spokes, and clamped fast, and the presser P adjusted by placing the pin T in the rear hole. The spoke is then inserted between the gage H and presser P, and pushed in until its shoulder strikes against the edge of the gage. The lever C is then brought down, and thins the tenon and cleans the shoulder at one blow.

In using the machine for tapering the spokes the side-presser P is not used, but is held back out of the way by inserting the pin T in the front hole through the shank of said presser. The crane L is then swung forward into the position shown in Fig. 4, and adjusted according to the thickness of the spokes. The face-plate H is then pushed back and secured in the position shown in Fig. 4. The gage K is moved into the proper position and adjusted so as to give the required taper. The spoke is then inserted beneath the presser M and pushed forward until its shoulder strikes against the edge of the face-plate H. By bringing down the lever C the proper taper is given to the spoke at one blow.

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

1. The combination of the knives G and I, the lever C, the spring F, the adjustable gage K, the adjustable face-plate H, the crane L, and adjustable presser M with each other and with the bed-piece A, substantially as herein described, and for the purpose set forth.

2. The combination of the knives G and I, the lever C, the spring F, the adjustable gage K, the adjustable face-plate H, and the adjustable side presser or holder P, substantially as described, and for the purpose set forth.

OLIVER VANORMAN.

Witnesses:

C. F. DODGE,
W. M. ROBINSON.