

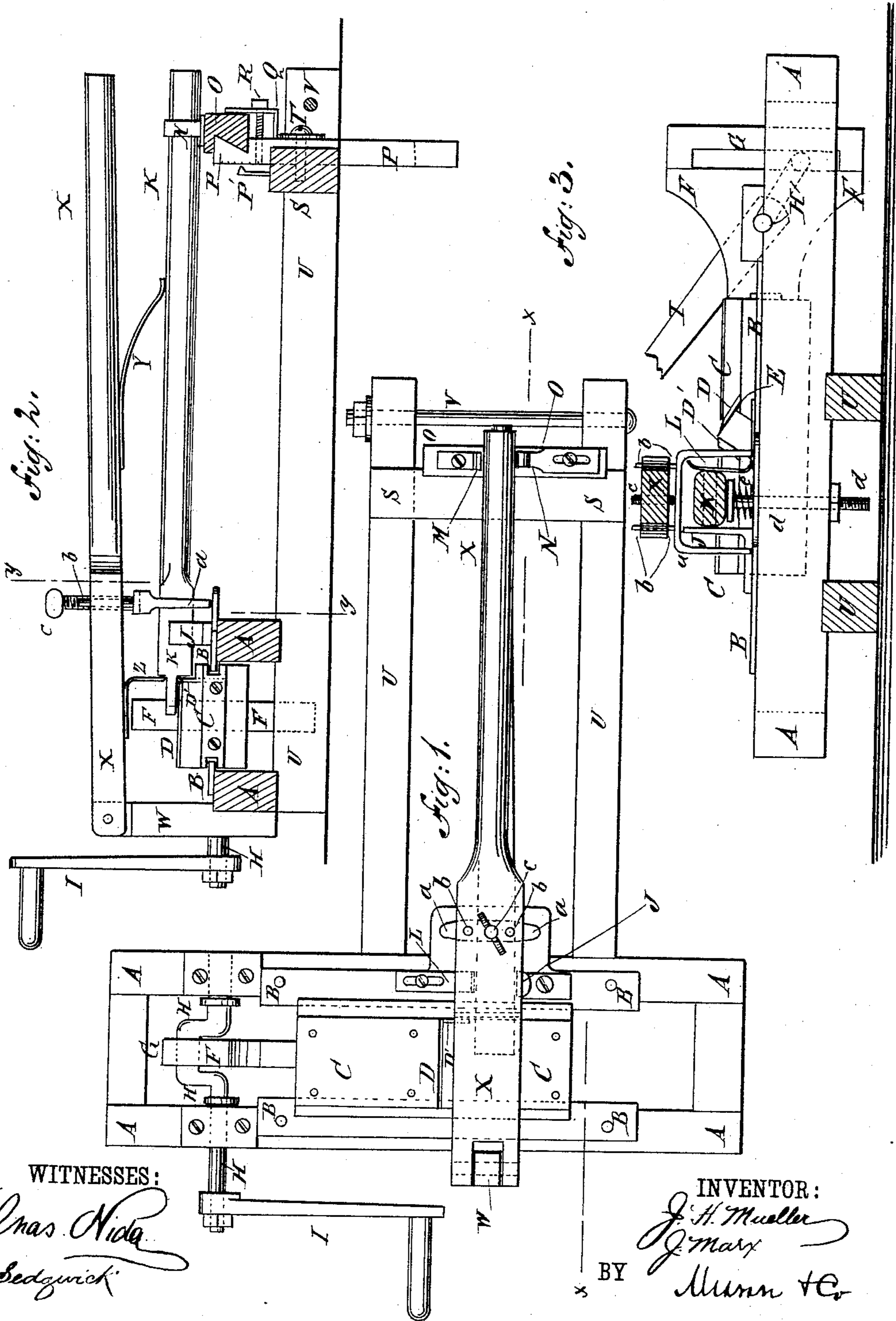
(No Model.)

J. H. MUELLER & J. MARX.

SPOKE FITTING MACHINE.

No. 348,922.

Patented Sept. 7, 1886.



# UNITED STATES PATENT OFFICE.

JOSEPH H. MUELLER AND JOSEPH MARX, OF CROSS PLAINS, WISCONSIN.

## SPOKE-FITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 348,922, dated September 7, 1886.

Application filed April 12, 1886. Serial No. 198,573. (No model.)

*To all whom it may concern:*

Be it known that we, JOSEPH H. MUELLER and JOSEPH MARX, both of Cross Plains, in the county of Dane and State of Wisconsin, have invented a new and useful Improvement in Spoke-Fitting Machines, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of our improved spoke-fitting machine. Fig. 2 is a sectional side elevation of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a sectional rear elevation of the same, taken through the line *y y*, Fig. 2.

The object of this invention is to provide spoke-fitting machines constructed in such a manner as to bring the spoke-tenons to the required size quickly and accurately, so that they will fit into the hub-mortises snugly.

The invention consists in the construction and combination of various parts of the machine, as will hereinafter be fully described.

A represents a frame formed of two side bars connected at their ends by two short end bars.

To the middle parts of the upper sides of the side bars of the frame A are attached plates B, the inner edges of which project to enter grooves in the sides of the plane-stock C, and thus serve as ways for the said plane-stock to move forward and back upon. The plane-stock C is placed in an inverted position, is provided with a plane-iron, D, kept in place by a wedge, E, in the ordinary manner, and with a knife, D', placed in front of the inner corner of the plane-iron edge to separate the chip about to be cut by the plane-iron from the shoulder of the spoke-tenon. The plane-stock C is rabbeted at one side of its face, so that the plane-iron D can cut close to the shoulder of the spoke-tenon.

To one end of the plane-stock C is attached a block, F, to the outer end of which is attached a recessed bar or keeper, G, to form a slot to receive a crank, H, journaled in bearings attached to the side bars of the frame A, so that the plane will receive a reciprocating movement from the revolution of the said crank H. One of the journals of the crank H pro-

jects, and to it is attached a crank, I, or a pulley, according as the machine is to be operated by hand-power or by other power.

To the inner side bar of the frame A is attached an angle-iron or bracket, J, for the edge of the spoke K to rest against while its tenon is being operated upon. The spoke K is held against the bracket J by an angular spring, L, the lower arm of which is slotted to receive the bolt that fastens it to the side bar of the frame A, so that the said spring can be adjusted as the width of the spokes to be operated upon may require. The outer end of the spoke K is held in place by a bracket, M, on one side, and on the other side by a U-shaped spring, N, having its outer arm extended, bent outward at right angles, and slotted to receive the fastening-bolt, so that the said spring can be adjusted as the width of the spoke may require. The bracket M and the spring N are attached to a short horizontal bar, O, placed parallel with the frame A, having a dovetail groove in its inner side to engage with the dovetail groove in the outer side of the upper end of the vertical bar P, and clamped in place by an angle-iron, Q, secured to the said vertical bar P by a bolt, R, the end of the lower arm of the said angle-iron Q resting against the outer side of the said vertical bar P, so that the bar O can be adjusted longitudinally by loosening the said bolt R. The vertical bar P is placed in a groove in the outer side of the cross-bar S, and is slotted longitudinally to receive the bolt T, that fastens it to the said cross-bar, so that the bars P O can be adjusted vertically by loosening the bolt T. The vertical movement of the bars P O is regulated by a gage, P', attached to the cross-bar S, and which points to division-marks on the inner side of the vertical bar P, as shown in Fig. 2. The cross-bar S is rabbeted on the lower sides of its ends to receive and rest upon the parallel bars U, the forward parts of which are rigidly attached to the lower side of the frame A. The cross-bar S is clamped between the outer parts of the parallel bars U by a bolt, V, passing through the outer ends of the said parallel bars, so that the cross-bar S can be adjusted nearer to or farther from the frame A, as the length of the spokes may require. With this construction the spoke-holding

mechanism can be readily adjusted as the length, thickness, width, or inclination of the said spoke may require.

To the outer side bar of the frame A, and  
5 directly opposite the bracket J and spring L, is rigidly attached the lower end of a short standard, W, to the upper end of which is hinged the end of a lever, X, of such a length that when lowered into a horizontal position  
10 its free end will extend to or a little beyond the outer end of the spoke.

To the lower side of the lever X is attached a spring, Y, which rests upon the middle part of the upper side of the spoke K, and holds  
15 the said spoke down in its place.

To the under side of the hinged lever X is attached the upper arm of an angle-plate, Z, the edge of the lower arm of which rests upon the upper side of the spoke-tenon and holds  
20 the said spoke down while being planed. The angle-plate Z also serves as a gage for the shoulder of the spoke-tenon to strike against, so that the said spoke cannot be pushed in too far. The downward movement of the  
25 spoke K, under the pressure of the lever X and angle-plate Z, is limited by the ends of the arms of the U-shaped bar *a* coming in contact with the plate B or with an extension of the said plate.

To the bend of the bar *a*, upon the opposite side of its center, are attached, or upon it are formed, two parallel rods, *b*, which pass through  
30 holes in the lever X, and serve as guides to keep the said stop-bar *a* in proper position.

To the center of the bend of the stop-bar *a* is swiveled the end of a hand-screw, *c*, which passes through a screw-hole in the lever X, or in a nut secured to the said lever, so that the stop-bar *a* can be adjusted, as the thickness of  
35 the spokes may require, by operating the said hand-screw *c*. The inner end of the spoke K rests upon the cross-head of the rod *d*, which passes down through the plate B and side bar, A, and has a spiral spring, *e*, placed upon it be-  
40 tween its cross-head and the plate B. The spring *e* is of sufficient strength to raise the spoke K out of contact with the plane when downward pressure is removed from the said spoke. The upward movement of the rod *d* is  
45 limited by a nut screwed upon its lower end, as shown in Fig. 3. With this construction spoke-

tenons can be worked down to fit the hub-mortises more quickly and more accurately than is possible when the work is done by hand in the ordinary manner.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. In a spoke-fitting machine, the combination, with a supporting-frame and a reciprocating plane mounted thereon, of the bracket J and the adjustable spring L, for holding the inner end of the spoke, and an adjustable clamping device for supporting and holding the outer end of the said spoke, substantially  
60 as herein shown and described.

2. The combination, with the frame A, carrying the plane, and the parallel bars U, attached to the said frame, of the cross-bar S, secured to the said parallel bars U by a bolt, V, the slotted vertical bar P, having a dovetail groove in the outer side of its upper end, and its fastening-bolt T, the horizontal bar O, having a dovetail groove in its inner side, and its fastening angle-plate Q and bolt R, and the bracket M and spring N, attached to the said bar, substantially as herein shown and described, whereby the outer end of the spoke can be securely supported, whatever be the length, width, thickness, or inclination of the  
70 said spoke, as set forth.

3. The combination, with the frame A, carrying the plane, of the standard W, the lever X, hinged to the said standard, the spring Y, and the angle-plate Z, attached to the said lever and engaging with the spoke, the stop-bar *a*, the guide-rods *b*, attached to the said stop-bar and passing through the said lever, and the hand-screw *c*, passing through the said lever and swiveled to the said stop-bar, and the screw-rod *d*, having cross-head, and the spring  
80 *e*, supporting the said screw-rod, substantially as herein shown and described, whereby the spoke will be held down upon the plane, and will be supported out of contact with the said plane when free from a downward pressure, as set forth.

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Witnesses:

GERHARD ISCH,  
JOHN ZEHNPFENNIG.