

(No Model.)

S. F. TIBBETTS.
WOOD MORTISING MACHINE.

No. 573,312.

Patented Dec. 15, 1896.

Fig. 1.

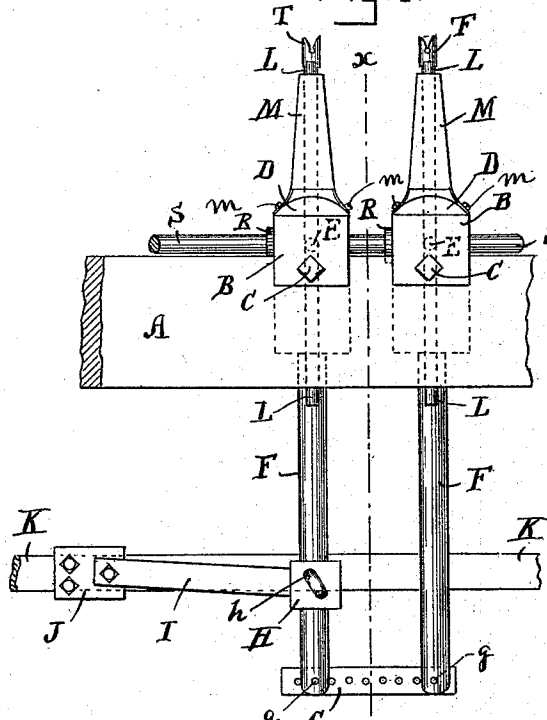


Fig. 2.

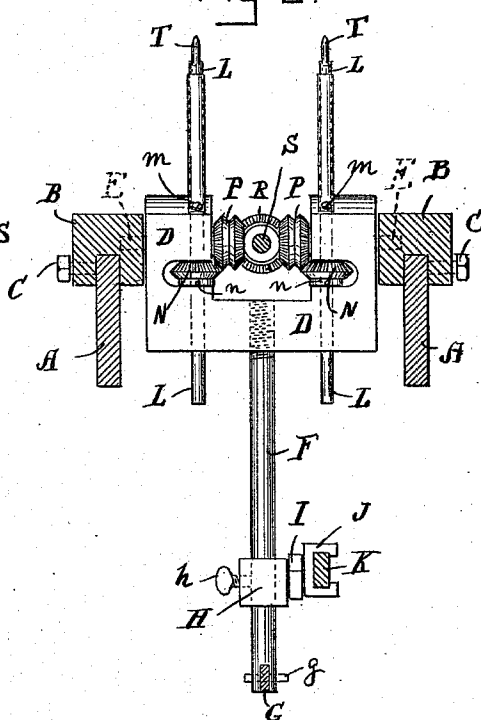


Fig. 3.

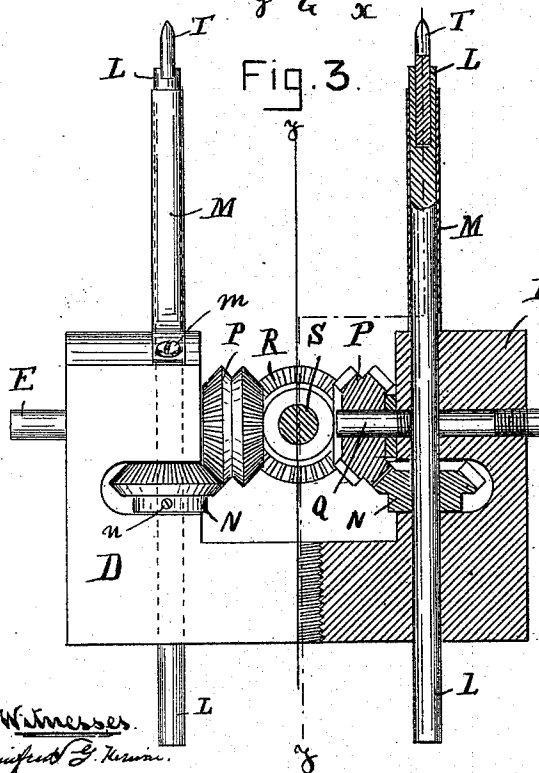


Fig. 4.

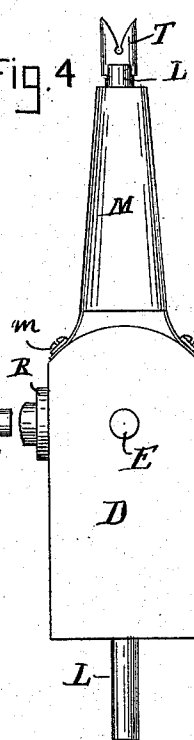
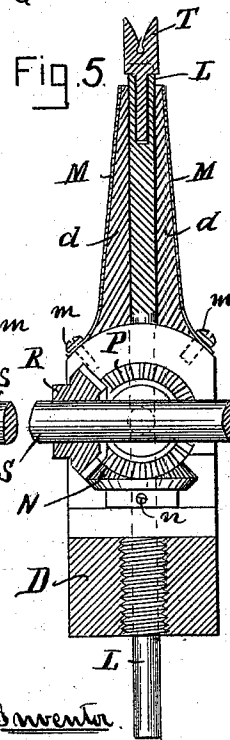


Fig. 5.



Witnesses.
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UNITED STATES PATENT OFFICE.

SAMUEL F. TIBBETTS, OF BIDDEFORD, MAINE.

WOOD-MORTISING MACHINE.

SPECIFICATION forming part of Letters Patent No. 573,312, dated December 15, 1896.

Application filed December 19, 1894. Serial No. 532,340. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL F. TIBBETTS, a citizen of the United States, residing at Biddeford, in the county of York and State of Maine, have invented certain new and useful Improvements in Wood-Mortising Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to certain improvements in mortising-tool holders for woodworking-machines and in the means for imparting a rotary motion to said tools; and the invention is particularly applicable for machines such as shown and described in Patent No. 455,538, issued to me the 7th day of July, 1891.

Referring to the accompanying drawings, Figure 1 represents a front view of a pair of tool-holders and their immediate connections embodying my invention. Fig. 2 is a vertical section taken on line *xx* of Fig. 1. Fig. 3 is a half side view and half-section of a tool-holder, rotary cutters, and driving-gear, drawn to a larger scale. Fig. 4 is an end view of same, and Fig. 5 is a vertical section taken on line *yy* of Fig. 3.

A A represent the front and rear rails, which extend from end to end of the machine. Upon each of these rails are mounted blocks or bearings B B, which are free to be moved to the required position on the rails A and there secured by set-screws C.

D is a tool-carrier of U shape and fitted at each end with a pintle or stud E, that works in a hole formed in the blocks or bearings B, so that the tool-carrier is free to oscillate in the center of the machine between the rails A.

A rod F is screwed into the bottom of each of the tool-carriers D, and when the tool-carriers are used in pairs the lower ends of said rods F are connected by a short bar G, formed with a series of holes, so that the distance apart can be easily adjusted by the insertion of pins *g*. On one of the rods F is fitted a small block H, free to be slid up and down and when in the desired position secured by a set-screw *h*. This block H is attached to an arm I, secured at its outer end to a block J, adjustably secured to a horizontal bar K, to which a reciprocating motion is imparted by any suitable means, thus imparting an os-

cillating motion to the tool-carrier D, as described in the aforesaid Patent No. 455,538. By means of the adjustable block H the throw of the cutters can be regulated to a hair's breadth, so that a mortise of any desired length can be cut.

L L are spindles for carrying the cutting-tools T. These spindles pass through the tool-carrier D, and the upper end of each spindle is held between two steadying-pieces *d d*, projecting from the top of the tool-carrier D, to keep said spindle steady, and in order to hold these pieces *d* in contact with the spindle and also to prevent said pieces from spreading I inclose them in a tapering metal case M, which at its lower end is secured to the top of the tool-carrier D by screws *m*. This metal case M is of a width somewhat less than the diameter of the cutter-head T, so that it will pass freely into the mortise being cut. Thus the metal pieces *d* are only of the same width as the diameter of the spindle and are held thereto by the metal case M, that prevents said pieces *d* from spreading, which would otherwise be the case if said cases M were not employed. Thus the two steadying-pieces *d d* are held in close contact with the spindle, causing it to run steady, while dirt or dust is prevented from entering between said steadying-pieces and the spindle.

Upon each of the spindles L is mounted a bevel-wheel N, which is secured in the desired place by a set-screw *n*, according to the depth of mortise to be cut. By this arrangement the spindles can be readily adjusted to a common height, each of the bevel-wheels N forming the support for its spindle, and in gear with each of said bevel-wheels N is one face of a double bevel-wheel P, mounted loosely upon a stud Q, secured in the carrier D. The outer faces of both of the bevel-wheels P are in gear with a bevel-wheel R, secured upon a shaft S, that runs the whole length of the machine and to which shaft a rotary motion is imparted by any suitable means.

In order to secure the cutting-tool in the spindle, I drill a hole in the upper end of each of said tool-spindles L, and said end is also formed with a cross groove or recess, the hole being to receive the end of the cutter T and the groove or recess to hold the head so that it cannot turn in its spindle. By this con-

struction I am enabled to employ spindles of hard steel rods and a cutter of a steel of different temper, so that should a cutter become broken or damaged a new one can be readily
5 inserted into the spindle at a very small cost.

By the above-described construction two pieces of material can be operated upon at the same time, each tool-carrier having two cutters to which a rotary motion is imparted
10 from the same gear on the driving-shaft, while an oscillating motion is imparted to the tool-carrier and to the cutters. The centers of the pintles E and the gears P P R, being on the same plane, allow the gears to rotate while
15 the tool-holder is being oscillated.

What I claim is—

1. In a woodworking-machine a tool-holder free to oscillate upon pintles secured in adjustable blocks mounted upon the rails of the
20 machine said tool-holder carrying spindles each adjustably supported in a bevel-wheel, in gear with one face of a double-faced bevel-wheel, the other face of which is in gear with a bevel-wheel mounted upon a shaft to which
25 a rotary motion is imparted substantially as set forth.

2. In a woodworking-machine an oscillating tool-holder carrying two rotating spindles

and having two tapering steadying-pieces for each of said spindles the width of the steady-
30 ing-pieces being about the diameter of the spindles whereby each spindle is held on its two sides in a conical holder, a conical metallic case for holding each pair of said taper-
35 ing steadying-pieces close to the spindle and also preventing said steadying-pieces from spreading substantially as set forth.

3. In a woodworking-machine a central driving-shaft S, a bevel-wheel R mounted thereon in combination with an oscillating
40 tool-holder D, recessed in its central portion, two double-faced bevel-wheels P mounted upon studs and working in said recess bevel-wheels N, cutter-spindles carried by said
45 wheels N, and two steadying-pieces *d, d* for each cutter-spindle, and a metallic case around said steadying-pieces and spindle sub-
stantially as and for the purposes set forth.

In testimony whereof I have signed my name to this specification, in the presence of
50 two subscribing witnesses, on this 2d day of August, A. D. 1894.

SAMUEL F. TIBBETTS.

Witnesses:

RADCLIFFE H. FORD,
J. E. ETCHELLS.