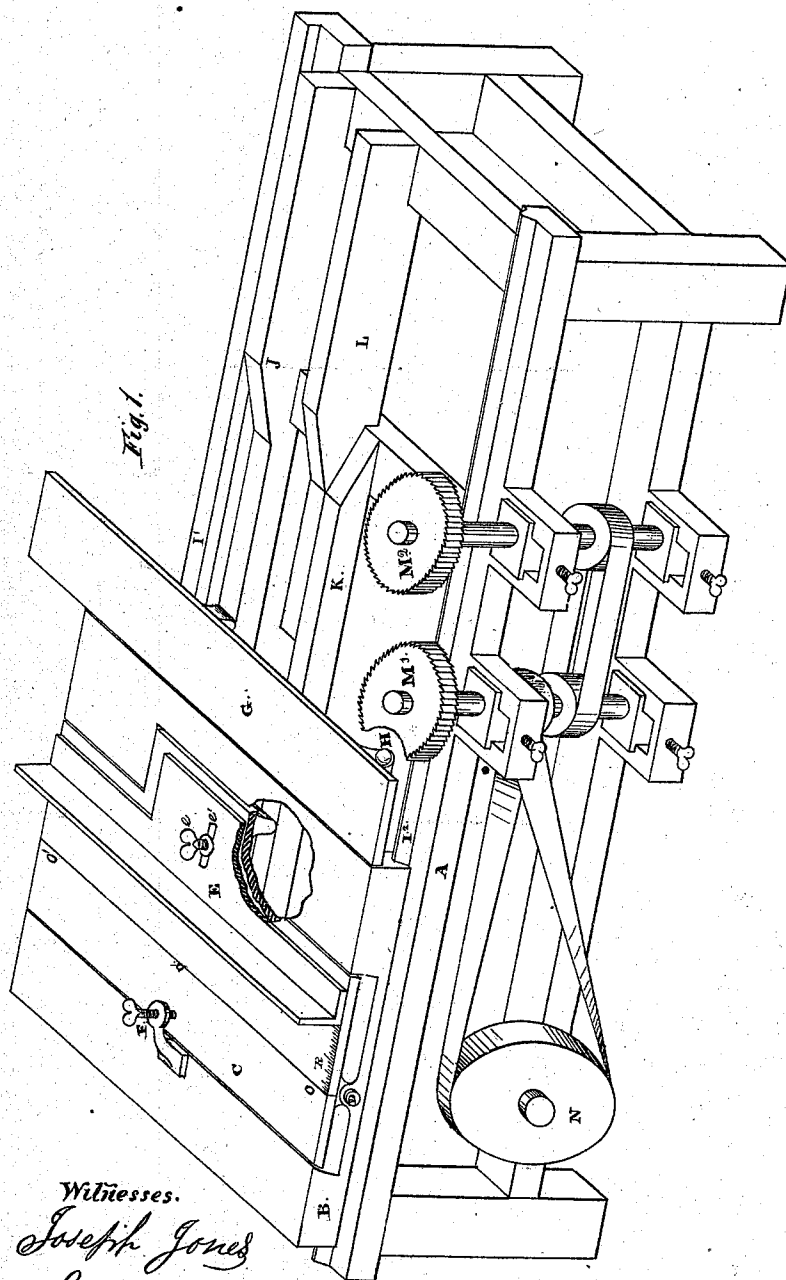
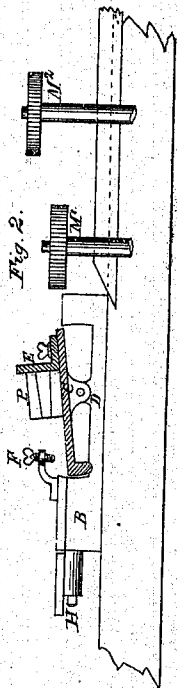


J. M. Seymour,

Dovetailing Machine.

No. 112502.

Patented Mar. 7. 1871.



Witnesses.
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JAMES M. SEYMOUR, OF NEWARK, NEW JERSEY.

Letters Patent No. 112,502, dated March 7, 1871.

IMPROVEMENT IN DOVETAILING-MACHINES.

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

I, JAMES M. SEYMOUR, of the city of Newark, in the county of Essex and State of New Jersey, have invented certain Improvements in Dovetailing-Machines, of which the following is a specification, reference being had to the accompanying drawing and letters of reference thereon, in which—

Figure 1 is a perspective view of the machine, and

Figure 2 is a section of table and cutters.

My improvement relates—

First, to a way of inclining and varying of inclinations with mechanical precision and facility those parts of tables on which are placed and held the piece to be dovetailed;

Second, to completing a dovetail without having to change the position of the piece on the table; and

Third, to constructing, arranging, and adapting saws or cutters for the production of dovetails upon pieces laid on tipping tables.

In the accompanying drawing—

A is the main frame of the machine.

B is a sliding frame or table.

C is an integral part of B, and is a tipping or reversible inclining table with its center of motion at D. Upon C is the adjustable stop or fence E.

F is a set-screw attached to the sliding frame B.

G is also a variable incline, with its center of motion at H.

I P are the guides for the slide B.

J is a form for varying the incline of G.

K is a form for varying the incline of C.

L is a detachable form for reversing the incline of C as may be needed.

M¹ M² are cutters or saws having perpendicular shafts in adjustable boxes; and

N is the driving-pulley.

The piece to be operated upon is laid upon the reversible or tipping table C, and is held, by the hand of the operator, close to the stop or fence E, and, together with the slide, is pushed from the operator past the horizontal cutter M¹.

It will be seen, upon reference to the drawing, where an opening is made through the frame to show it, that there is a guide or bearing attached to the under side of the front edge of the tipping table C resting upon the form K, which lifts up the edge of the table when it comes to the incline on the detachable form L, or depresses it by the opposite incline K when the detachable form L is removed, the guide or bearing being kept down on the forms by the forward force from the hand of the operator holding the piece to the stop or fence, pushing the table from him on the sliding frame B.

At the back edge of the tipping table C is a set-

screw, to determine the degree of reversed incline when the bearing on the front edge of C is descending the incline on K, as shown in fig. 2.

To dovetail both ends of a piece on the same table by the same saws it is indispensable that a change of inclines in two directions should be made. Tipping the table C does it in one direction, and the movable form L, when in place, does it in the other.

The horizontal cutters on upright adjustable shafts are formed by a series of circular plates with cutting-edges, more or less of which are used, as more or less wood has to be cut away. Any needed length of shaft, with cutters at distances required for dovetails in the end of a board, can be used in the machine. It being desirable to cut both inclines of a dovetail during one motion forward from the operator of the piece upon the table without changing the position of the piece lying against the stop or fence, there are two cutters, one for each incline. The top of the one and the bottom of the other are placed at the needed distance for the size of the dovetail, and the forms used change the incline with the stuff to be dovetailed, while the slide is carrying the piece from one saw or cutter to the other and while the stuff is between the said cutters.

The varying incline G is intended to do for the recesses what the tipping table C does for the pins, other appropriate cutters being provided to be put upon the same shafts.

In fig. 2, at P, the end of a rail is shown with a pin cut thereon, the line of its under side having been cut by the saw or cutter M² while the table had the incline, as shown, the upper line having been cut by the saw or cutter M¹ with the table tipped the other way.

To have uniform dovetails it is all important that in changes of incline the middle of the thickness of the rail should, in both inclinings, be exactly at the same height from and parallel with the face of the sliding table B. It matters not the distance on a line of radiation from the center, the rail may be placed, so long as the rail rests equidistant from a line that is perpendicular to the center and at the same parallel on either side, in being tipped. It is, therefore, indispensable that the fence or stop should place and keep the rail with one-half its thickness upon each side of a line at right angles with and perpendicular to the center of radiation when the faces of B and C are parallel.

To facilitate placing the rail in this indispensable position, an indicator line is made upon the table at o and o' of the line from the center of motion, and a scale, R, made upon or attached to the table. The thickness of the rail being known, the fence E can be

adjusted thereby accordingly, by the screw *e*, which works in the slot *e'* of the movable fence *E*.

Other means than that described, for changing the inclining of the tipping table with the stuff to be operated upon by the cutters, may be used, and while the stuff is between the cutters, as, for instance, bell-cranks or oscillating or revolving cams may be used for the same purpose and have the same effect as the devices heretofore and above described; but by the use of the several modes, the forms or ways, as heretofore and above described, I find to be the preferable one.

What I claim as my improvements, and desire to secure, is—

1. The tipping table *C*, having the adjustable stop or fence *E*, in combination with the saws or cutters *M*¹ and *M*² and form *K*, in the manner and for the purpose described.

2. The oscillating table *G*, in combination with the saws or cutters *M*¹ and *M*² and form *J*, in the manner and for the purpose described.

3. The tipping reciprocating table *C*, having the adjustable fence *E*, in combination with the removable form *L*, in the manner and for the purpose described.

4. The tipping reciprocating table *C*, having the indicator line *o o'*, in combination with the saws or cutters *M*¹ and *M*² and forms *K* or *L*, in the manner and for the purpose described.

5. The adjustable stop or fence *E*, in combination with the graduated scale *R* arranged upon table *C*, in the manner and for the purpose described.

6. The tipping reciprocating table *C*, having the adjustable stop or fence *E*, indicator line *o o'*, in combination with the temper or set-screw *F*, in the manner and for the purpose described.

JAMES M. SEYMOUR.

Witnesses:

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