

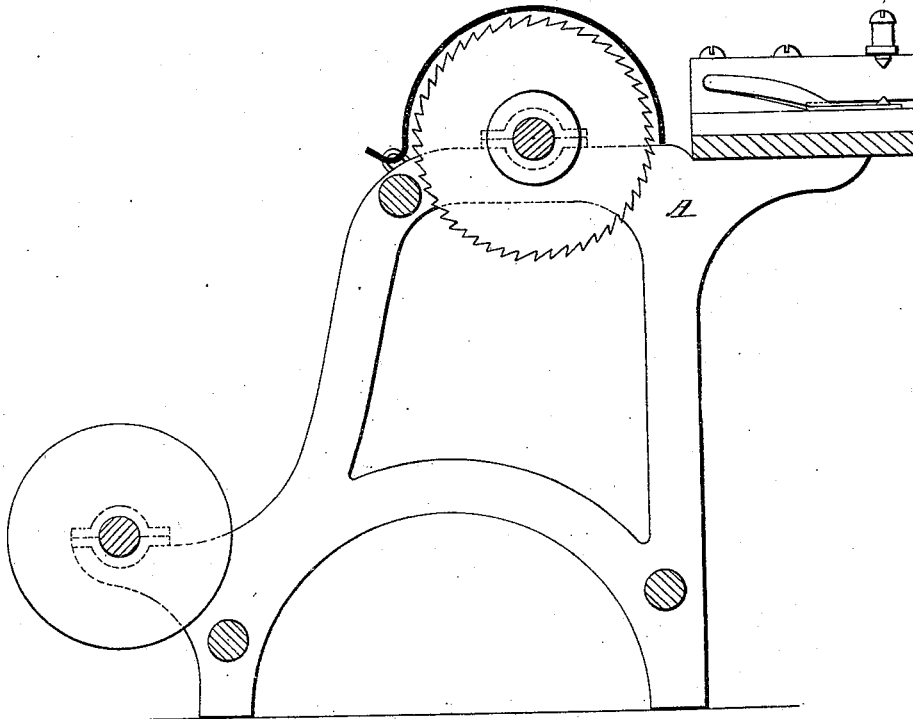
*De Witt C. Smith.*  
*Dovetailing Machine.*

*Sheet 1-2 Sheets.*

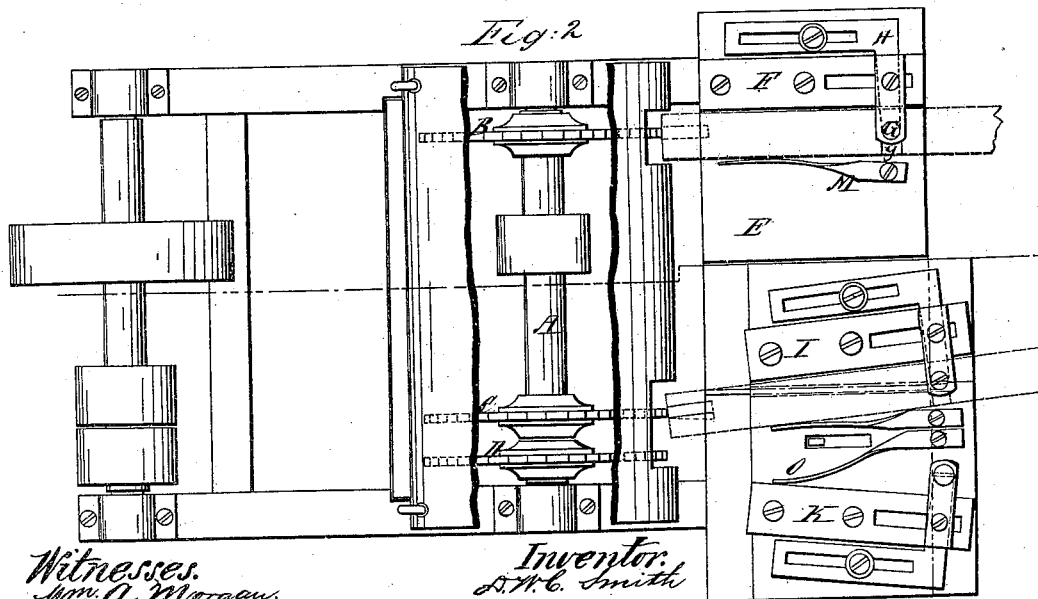
*Nº 107,555.*

*Patented Sep. 20, 1870.*

*Fig. 1*



*Fig. 2*



*Witnesses.*  
*Wm. A. Morgan.*  
*V. C. Cotton*

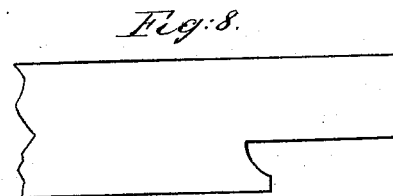
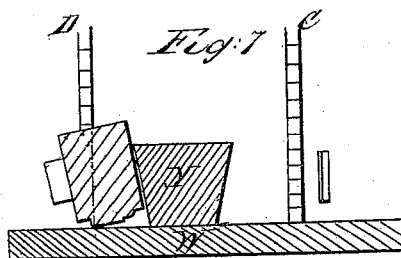
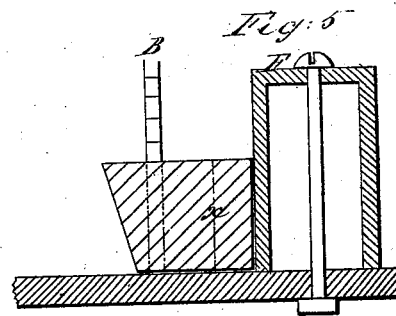
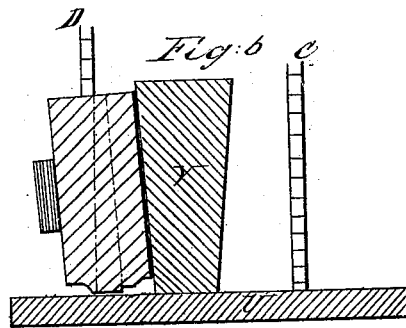
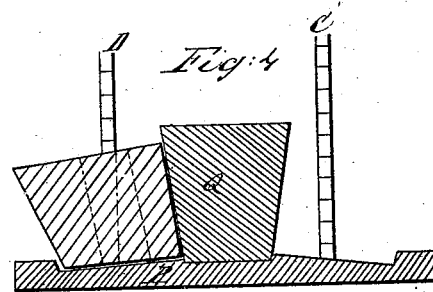
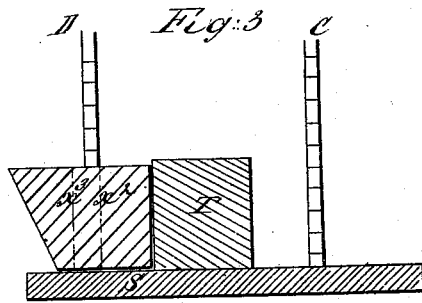
*Inventor.*  
*D. W. C. Smith*

*per Munroe*

*De Witt C. Smith.*  
*Dovetailing Machine.*

*N<sup>o</sup> 107,555.*

*Patented Sep. 20, 1870.*



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*Am. A. Morgan.*  
*G. C. Cotton.*

*Inventor.*  
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*attorney.*

# United States Patent Office.

DE WITT C. SMITH, OF MONTGOMERY, ILLINOIS.

Letters Patent No. 107,555, dated September 20, 1870.

## IMPROVEMENT IN MACHINES FOR DOVETAILING WINDOW-SASH.

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, DE WITT C. SMITH, of Montgomery, in the county of Kane and State of Illinois, have invented a new and useful Improvement in Machines for Dovetailing Window-Sashes; 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 drawing forming part of this specification, in which—

Figure 1 represents a side elevation of my improved machine;

Figure 2 represents a plan view, with a part broken away;

Figures 3, 4, 6, and 7 represent detachable tables, provided with guides, adapted to present the different pieces properly to the saws;

Figure 5 represents the manner of presenting the meeting rail of the bottom sash to the saw B; and

Figure 8 represents the ends of check-meeting rails after they have passed through the tenoning-machine. Similar letters of reference indicate like parts.

The object of this invention is to provide a simple machine for forming the dovetail tenons, and slots for joining the frames of window-sash.

It consists in the arrangement of the adjustable table, detachable bed, adjustable spring stops, and the guides, with reference to the saws mounted upon a horizontal arbor, as will be hereinafter more fully described.

A represents a saw-mandrel arranged on a suitable bench, and provided with three saws, B, C, and D, which are designed to be of about the thickness of the narrowest part of the slots in the stiles.

E represents a table arranged on the frame in front of the saws, and provided with guides adjustably connected thereto, for governing the position of the different parts as they are presented to the saw.

F represents a guide, against which the stile is guided to cut the straight side of the slot, as shown in red in fig. 2. It is shoved in against the saw until the adjustable stop G, on the guide F, drops into the mortise for the cross-bar of the sash, as shown at g, which has been previously made. The stile is then withdrawn, and the other end presented, with the other side up, in the same manner, until a spring stop, H, laying on the face of the table, drops into the said mortise. The stile is then presented, in the same manner, to the saw C by the inclined guides I or K, for sawing the dovetailed side of the slot. As the saws are as thick as the narrowest part of the slot, and as the widest part is not more than twice as wide as the said narrow part, the saws will remove all the stock necessary to complete the said slots.

M represents spring guides for pressing the material against the side of the guides.

N represents a guard hinged to the frame to protect the operator from the saws.

For sawing the bottom and top rails, and the meet-

ing rails, detachable tables may be provided, with guides, especially designed and adapted to the several parts which may be connected to the table in place of that part, O, of it to which the guides I and K are connected, which is made detachable for the purpose.

For this purpose the above rails are first passed through a tenoning-machine in the usual manner for making a tenon, except the check-meeting rails, which are only cut on one side far enough to form a shoulder, with a cope, to fit the bead or molding on the stiles, as seen in fig. 8, which shows the meeting rail for the bottom sash.

This rail is then presented to the saw B, as represented in fig. 5, where F represents the guide, as shown in fig. 1, and sawed in a distance equal to the recess on the other side, shown by the dotted lines x. It is then transferred to one of the before-mentioned detachable portions of the table, as shown in fig. 4, having an inclined bed and guide, Q, whereby the tenon is finished at the right angle to fit the mortise in the stile, as before described.

To finish the corresponding tenon on the other end, it is placed on the opposite side of the guide Q, and presented in like manner to the saw C.

The upper meeting rail is placed on an inclined bed when under the operation of the tenoning-machine, and the recess cut is thereby inclined on that side which constitutes the face of the tenon, as shown, at x<sup>2</sup>, in fig. 3.

The end of the rail is then presented to the saw D and the vertical side of the tenon formed, a detachable table, S, provided with a vertical guide, T, being used; but, the slot thus formed by the saw not being of sufficient width, the rail is again moved to the saw B.

When the slot is widened to the line marked x<sup>3</sup>, in fig. 3, both ends of this rail may be finished by the saws D and B by turning them bottom-side up as they are reversed endwise. After this they are passed through the molding-machine and finished.

For forming the ends of the bottom and top rails, and the plain meeting rails, the detachable tables U and V, provided with the inclined guides W and Y, are used, by which all the material may be cut away to form the tenon by removing them from the saw D to the saw C.

Having thus described my invention,

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

The arrangement of the adjustable table E, detachable bed O, guides F I K, adjustable spring stops H G, and spring guides M, and the saws B C D, mounted upon the horizontal arbor A, all constructed and operating as described, for the purpose specified.

D. W. C. SMITH.

Witnesses:

V. A. WATKINS,  
M. M. WATKINS.