

W. W. Maughlin,

25 Sheets, Sheet 1.

Making Window and Door Frames.

N<sup>o</sup> 64,779.

Patented May 14, 1867.



Fig. 4.

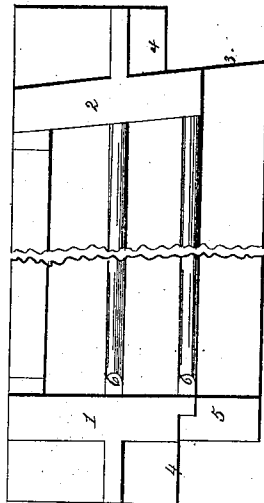
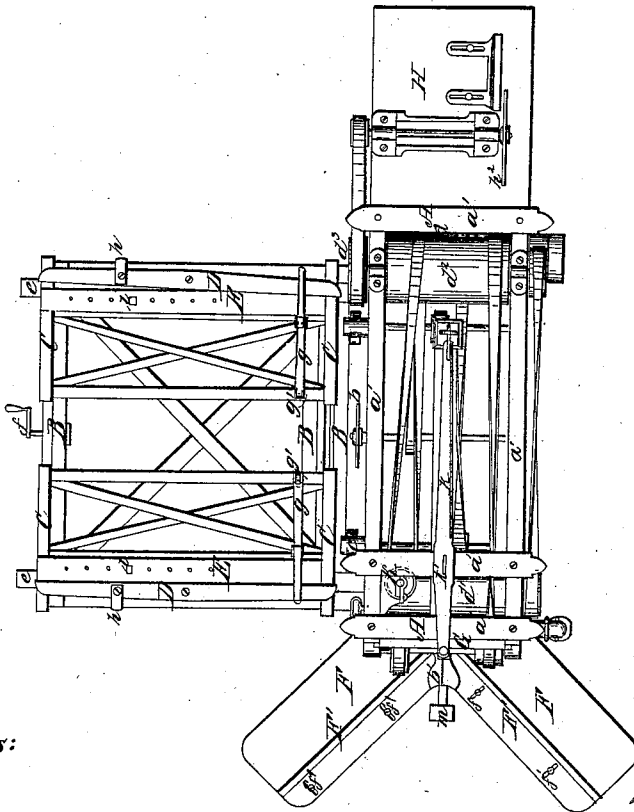


Fig. 1.



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by his Atty  
Addison M. Smith

W. W. Maughlin,

2 Sheets. Sheet 2.

Making Window and Door Frames.

N<sup>o</sup> 64,779.

Patented May 14, 1867.

Fig. 3.

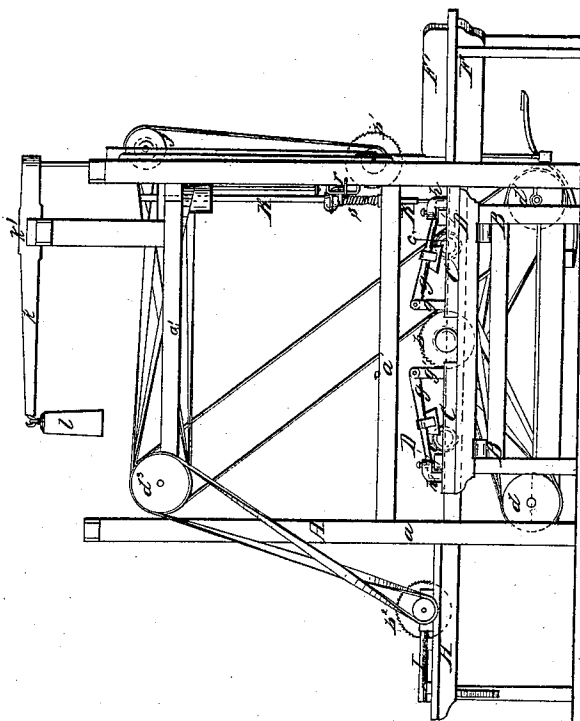
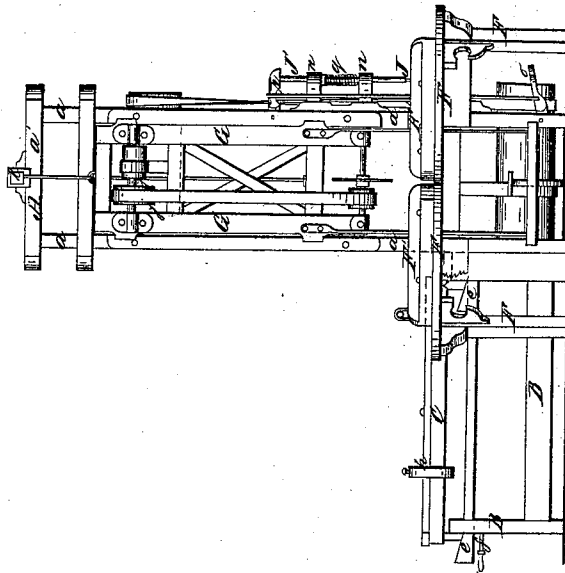


Fig. 2.



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# United States Patent Office.

W. W. MAUGHLIN, OF BALTIMORE, MARYLAND.

*Letters Patent No. 64,779, dated May 14, 1867.*

## IMPROVEMENT IN MACHINES FOR MAKING DOOR AND WINDOW-FRAMES.

*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, W. W. MAUGHLIN, of Baltimore, county of Baltimore, and State of Maryland, have invented a new and useful Improvement in Machines for Working Window and Door-Frames; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan or top view of the machine.

Figure 2 is a front or end elevation.

Figure 3 is a side elevation of the same; and

Figure 4 represents one of the frame-pieces hereinafter referred to.

Similar letters of reference refer to corresponding parts in the several figures.

The invention relates to the manner of combining in the machine the rotary cutters for cutting the grooves or gains in the framings for windows and doors with saws for "jogging" or tenoning and mitreing the said frames, as hereinafter set forth.

In the accompanying drawings, A represents a framing consisting of the uprights *a* and the horizontal pieces *a'*, upon which, in suitable bearings, are mounted the shafts of the circular saw *b*, and one or more rotary cutters *c c*, to which motion is communicated by means of belts from the main driving-shaft and drum *d* and intermediate drum *d'*, in the manner shown by the drawings, or in any other convenient manner. B is a second frame or saw-table, upon which are placed one or more sliding carriages, C, which are moved over suitable ways or tracks formed on the saw-table, and which are for the purpose of properly supporting and carrying to the saw *b* or over the rotary cutter *c* the frame-pieces to be worked, or in which the grooves or gains or the "jogs" or tenons are to be cut, and in such manner as that the grooves or gains shall be cut on the under side thereof. *e e* are wedges, four in number, connected to the four corners of a sliding carriage operated by the crank-screw *f* for the purpose of raising or lowering the surface of the saw or cutter-table C, and thereby regulating the depth of the grooves or kerfs formed in the frame-pieces by the cutters *c* without regard to the thickness of the material of which said frame-pieces are constructed. *g* is a weighted or spring lever pivoted to a standard, *g'*, on the sliding carriage and arranged in convenient position for holding that end of the frame-piece in which the groove is to be cut firmly down upon the carriage C. On the upper side of carriage C is a movable rest, D, against which the frame-pieces rest and are held in being worked, and which is fastened to said carriage by a central bolt or pin, upon which it may be adjusted and held by means of a clamp, *h*, or other suitable device, at any required angle with the line or path of movement of the carriage C in such manner as to present the frame-pieces to the circular, jogging saw *b*, or to the grooving cutters, at any desired angle of inclination. The object of this rest is to regulate the angle at which the grooves (see 1-2, fig. 4) and the transverse cut (3, fig. 4) in the "jog" are formed in the frame or the angle of presentation of said frame-pieces to the rotary cutter and circular saw. E is a perforated or slotted sliding gauge provided with the pin or stop *i* for regulating or gauging the distance in the length of the frame-pieces at which the grooves or jogs are cut in such manner that when once set or adjusted the groove or jog may be cut in any number of such frame-pieces at a uniform distance from the outer end thereof, and when used in connection with the movable rest D for regulating the angle of presentation, and with the means above described for regulating the depth of the grooves or gains formed by the rotary cutters *c* it will be seen that a frame-piece of any desired length, depth of groove, and angle of groove or "jog" may be exactly duplicated to any required extent. The rotary cutters *c* consist of two circular saws or cutters (or of a number of segments thereof) attached to the shaft or mandrel at a distance from each other corresponding to the width of groove to be cut in the frame-pieces, and should be attached in such manner that they may be adjusted nearer to or further from each other by means of adjustable sliding collars, or other suitable device, for the purpose of varying the width of the groove, if desired. Between said circular cutters, and at right angles thereto, is a series of any desired number of radial, curved, or planing cutters, arranged in such manner as to cut to the same depth as the circular cutters for cutting or planing out the material between the kerfs formed by said circular saws or cutters. F is a triangular stand or frame located at one end of the frame A and attached thereto, and on which is placed the mitre-frame or gauges F' so arranged as to form an angle to each other of ninety degrees. Said gauges are slotted, as shown at *f*, and are secured to the table by thumb-

screws or bolts in such manner as to admit of slightly varying the angle should it be found desirable or necessary to compensate for wearing or springing of the parts. G is a sliding frame arranged between the end uprights of the main frame A in such manner as to be free to work up and down ways or guides thereon. In the lower part of said sliding frame a circular saw, *b'*, is mounted in suitable bearings, said saw being driven by a belt from pulley *j* on shaft *j'*, which, in turn, is driven by a belt from drum *d'* in the opposite end of frame A. By this arrangement of the driving-belts sufficient freedom of movement of the sliding frame is provided for to admit of the adjustment of the saw, as hereinafter explained. *k* is a weighted lever, having its fulcrum on a cross-piece of the main frame at *k'* and attached at its short end by a suitable hook or link connection to the top of sliding frame G. The long arm of lever *k*, has a weight, *l*, attached to it for the purpose of counterbalancing the weight of the frame and maintaining it and the saw when not operated or drawn down by the attendant in its elevated or highest position. *m* is a treadle having its fulcrum in a lower cross-piece of the frame, and which is linked to the sliding-saw frame, as shown in fig. 2, or in any suitable or convenient manner, so that when the foot of the operator is pressed upon the treadle said frame is drawn down, forcing the saw into the opening formed in the angle of the mitre-frame, and in such relation thereto as that the opposite sides of said frame shall form an angle to the sides of the saw of forty-five degrees each, as shown in fig. 1. In cutting the mitre in the frame-pieces, shown at 5, fig. 4, said frame-pieces are placed edgewise under the saw and against one or the other of the sides of the mitre-frame, as required, and the saw being drawn down upon it descends centrally upon the frame-piece, cutting it edgewise at the proper angle, maintaining the same angle to any desired depth, and avoiding the winding or "running" action consequent upon entering the saw at the side of the frame-piece, as is usually done when cutting at any other than a right angle with the grain of the wood. Upon the opposite end of the frame is secured another saw-table, H, in suitable bearings, in which is mounted the circular saw *b''* operated by a belt from a pulley, *d''*, on the same shaft with drum *d'*. The object of this saw is to form the longitudinal cut (4, fig. 4) completing the "jog" or corner rebate, the transverse cut (3, fig. 4) in which is made by the saw *b*, as described. I is an adjustable rest attached to the saw-table H for regulating the cut of the saw, as desired. J is a coping-chisel for coping the ends of the round beads of the frame, (see 6, fig. 4.) Said coping-chisel is applied to the sliding shank or rod *J'* in any usual manner. The sliding shank or head is supported in bearings attached to one of the corner uprights of the main frame, as shown at *n*, fig. 2, and is operated by a treadle, O, which has its fulcrum in the frame A, and which is linked to the pivoted arm or lever *p*, one end of which rests upon the shank *J'*. The copier is retracted by coiled spring, *q*, which rests upon one of the bearings of the shank *J'*, and bears at its upper end against a flange or hub on said shank, as shown in fig. 2. K is a bit or auger for boring the frame-pieces to receive the pulleys and pulley-cords. It is located inside the framing A in convenient relation to the saw-table B to enable the latter to be used as a support for the frame-pieces being operated upon thereby. Said bit is operated by a belt from the drum *d'*, and is forced down through the material operated upon by means of lever *r* and retracted by a coiled spring, *s*, (see figs. 1 and 3,) or in any usual or convenient manner. In fig. 4, 1-2 represent the grooves in a frame-piece cut by the rotary cutters *c*, the angle and depth of said grooves being regulated by the means hereinbefore described, the groove 1 being in this instance designed to receive the cap-piece of the frame, and the groove 2 the sill thereof. 3 is the transverse cut of the "jog" for the sub-sill formed at the same angle or nearly the same as the sill-groove, which angle is regulated by the same means as those regulating the angle of the groove and cut by saw *b*. 4 is the longitudinal cut in the jog made by saw *b''*. 5 is the mitre formed by saw *b'*, and 6 represents the cut or groove formed in the round bead by the copier J.

The advantages of the constructions and combinations herein described will be readily understood. Herebefore the grooving, jogging, and mitreing above described have been done principally by hand, or, at best, in part only by machinery, and then by distinct and separate machines, and in such manner as to require much outlay of labor and a separate construction and fitting of each frame independently of all others. The effect of this was that in transporting frames to a distant point it was usual to set up the frames complete, thereby rendering them unwieldy and inconvenient for purposes of transportation. By the employment of machinery arranged and operating as described each part of the frame is exactly duplicated to any desired extent, consequently any one part will exactly fit or match with the other and corresponding parts of a frame, and when the machine is once regulated to cut the frames of any form or pattern required, all necessity for further fitting or matching or for the numbering of the parts thereof, or of setting up the frames, is avoided. The changes necessary to adapt the machine to the working of the different kinds of frames, whether for frame or brick buildings, will be apparent without further description.

What I claim as new, and of my invention, is—

1. The saw-table B, provided with the adjustable gauges, as described, in combination with the circular saw *b* and one or more grooving cutters, constructed, arranged, and operating substantially as and for the purpose set forth.

2. The mitre-stand or table provided with the adjustable gauge *F'*, in combination with the vertically adjustable mitre-saw *b'*, arranged and operated as set forth.

In testimony whereof I have hereunto set my hand this twelfth day of March, 1867.

W. W. MAUGHLIN.

Witnesses:

JAS. MAUGHLIN,

CHRIS. JOURGENSEN.