L. R. PALMER.

MACHINE FOR JOINTING STAVES.

No. 188,257. Patented March 13, 1877.

Fig. 1.

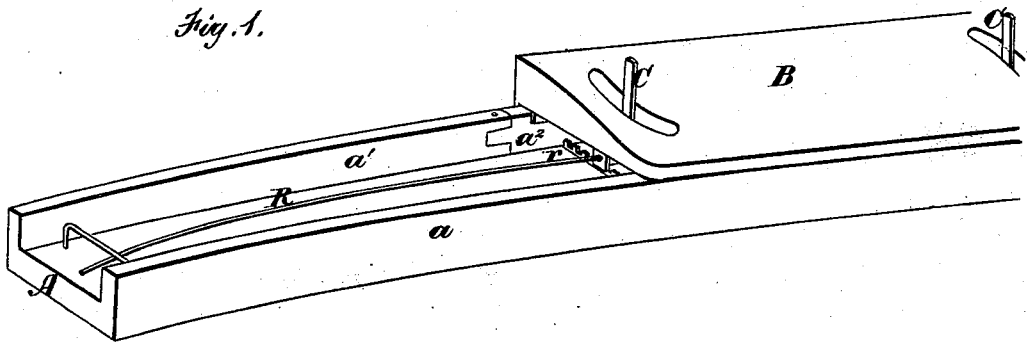


Fig. 2.

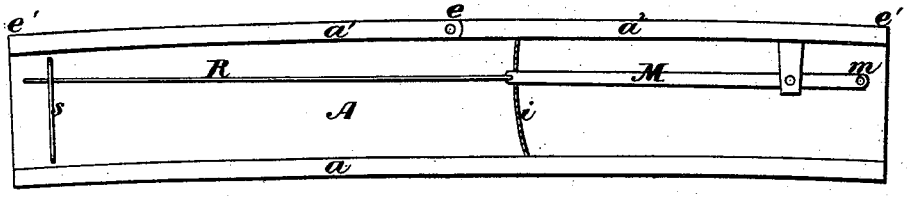


Fig. 3.

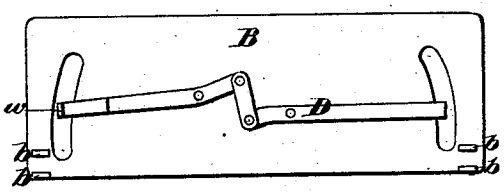
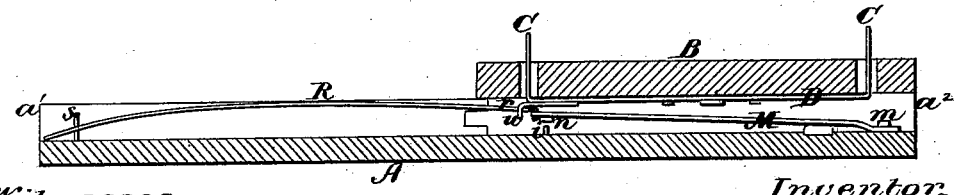


Fig. 4.



Witnesses.

C. F. Brown.

Melville Church

Inventor.

L. R. Palmer.

by his Attys.

Hill & Ellsworth.

UNITED STATES PATENT OFFICE.

LEMUEL R. PALMER, OF BELFAST, MAINE.

IMPROVEMENT IN MACHINES FOR JOINTING STAVES.

Specification forming part of Letters Patent No. **188,257**, dated March 13, 1877; application filed May 23, 1873.

To all whom it may concern:

Be it known that I, LEMUEL R. PALMER, of Belfast, in the county of Waldo and State of Maine, have invented certain new and useful Improvements in Stave-Jointing Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view; Fig. 2 is a top-plan view, with the carriage removed. Fig. 3 is a bottom-plan view of the carriage, and Fig. 4 is a longitudinal vertical section.

Similar letters of reference in the accompanying drawings indicate the same parts.

This invention relates to that class of stave-jointers in which the horizontal movement of either the stave-carriage or the saw is controlled by adjustable guides, so as to vary the curvature of the edge of the stave proportionately to its width; and more especially it relates to that subdivision of the above-mentioned class in which the adjustment of the guides is effected or controlled by the width of the stave itself when placed on the carriage or other support in the proper position for jointing.

As an improvement in the class of machines referred to my invention has for its object to render such machines less complicated and expensive in construction, and more simple, effective, and certain in operation than heretofore; and to this end the invention consists in a new and improved method of connecting the adjustable bearings which fit against the edge of the stave with the guide or guides which control the movement of the saw or carriage, as I will now proceed to describe.

In the drawings, which represent that form of the machine in which the saw is stationary and the carriage is movable, A is the frame of the machine or attachment, provided with a fixed track, *a*, which may be slightly curved, as shown, and on the opposite side having an adjustable guide-track, a^1 a^2, one or both ends of which may be laterally movable. As shown in Fig. 1, the adjustable guide-rail a^1 a^2 is represented as constructed in two pieces, one, a^1, being immovable and rigidly secured to the frame of the machine or attachment, while the other, a^2, is articulated to said frame at the point *e*, so as to swing laterally at its outer end. Both parts a^1 a^2 may, however, be pivoted at the point *e*, so as to swing at their outer ends; or at the points e' e', so as to swing at their inner ends; or at any point between the points *e* e', so as to swing both at their outer and their inner ends; or they may be constructed of a flexible strip or strips, if preferred, which will swing at one or both ends or the middle, or the middle and one or both ends, as above referred to, but without the use of a pivot. B is the carriage, provided with notched feet or with pins *b* *b* at each end, at or near the edge next to the saw, said feet or pins bestriding the guide-rail and causing the carriage to move in a line the curvature of which shall be exactly proportionate to the deviation of the guide-rail from a straight line. C C are movable arms or bearings projecting through curved slots in the carriage, and attached to a compound lever, D, under the carriage, as shown in Figs. 2 and 3. These arms or bearings are adjusted against the edge of the stave when it is laid on the carriage in the proper position for jointing, so that their position or inclination, and consequently the position of the compound lever D, is determined directly by the width of the stave. The adjustable guide-track is moved and adjusted laterally by means of a lever, M, pivoted to the frame A at *m* and provided with a knife-edge, *n*, which engages with a rack, *i*, so as to remain fixed in position and hold the guide-track firm and immovable, except when the end of the lever is raised so as to disengage it from the rack. R is a long rod attached to the lever M, as shown, and extending nearly to the front end of the frame A, where it passes through a guide-slot or under a strap, *s*, which limits its movement. The rod bends upward from the end of the lever, as shown at *r*, and then, preferably, downward toward the guide *s*, as represented in the drawings. This rod passes through a hole in a small plate, *w*, affixed to the end of the lever D in such a manner that, as the carriage is gigged back to the position shown in Figs. 1 and 3, the plate, acting on the incline *r*, raises the knife-edge *n* out of the rack *i* and allows the lever M to swing freely, but when the carriage is moved forward again the lever drops

to its former position and holds the guide-rail fast. The guide-rail can thus be adjusted only when the carriage is at the end of its movement, and the curvature of the track, once being adjusted to a stave, is not liable to be altered during the jointing of that stave.

In practical operation, the carriage being at the end of the track, as shown in Figs. 1 and 3, the stave is placed on the upper edge of the carriage, and the arms or bearings C, if not already in contact with it, are moved up against it. As they are thus moved up they swing the lever D, and, through the instrumentality of the plate *w* and rod R, they also swing the lever M and cause it to adjust the guide-rail proportionately to the width of the stave. The carriage is then moved forward to bring the stave in contact with the jointing-saw, and, as soon as it moves, the incline *r* releases the lever M, which drops and engages with the rack, and holds the guide-rail firmly in position till the carriage returns, as above described.

When the pivot of the guide-rail is arranged in a different position from that shown in the drawing, the arrangement of the lever M and rod R may have to be varied to correspond thereto. For example, if the center of the guide-rail is made to swing, then in that case the lever M should be reversed and the rod R should extend along its whole length, preferably above said lever, so as to swing the long arm of the latter. The inclination of the rod near the point where it connects with the lever should be preserved, however they may be arranged.

The rod may be made very small and light, especially beyond said inclination, as it there serves merely as a guide to direct the inclined part *r* properly into the lifting-plate *w*. Indeed, a short inclined arm or rod might be attached to the lever M and connected to the opposite end of the machine by a cord instead of the extension of the rod R, which lies beyond the incline *r* shown in the drawings. The cord would answer precisely the same purpose. If the rod is preferred, a light flexible wire is all that is necessary.

Having thus described my invention, what I claim as new is—

The adjustable rail, operated by a lever, M, and the stave-carriage, with its bearings C, lever D, and plate *w*, when combined with a lifting-incline, *r*, and a wire or cord for guiding the incline into the plate *w*, substantially as shown, and for the purposes set forth.

LEMUEL R. PALMER.

Witnesses:

MELVILLE CHURCH,

C. F. BROWN.