(No Model.)

R. W. TAVENER.

STAVE JOINTING MACHINE.

No. 304,873. Patented Sept. 9, 1884.

Fig. 1

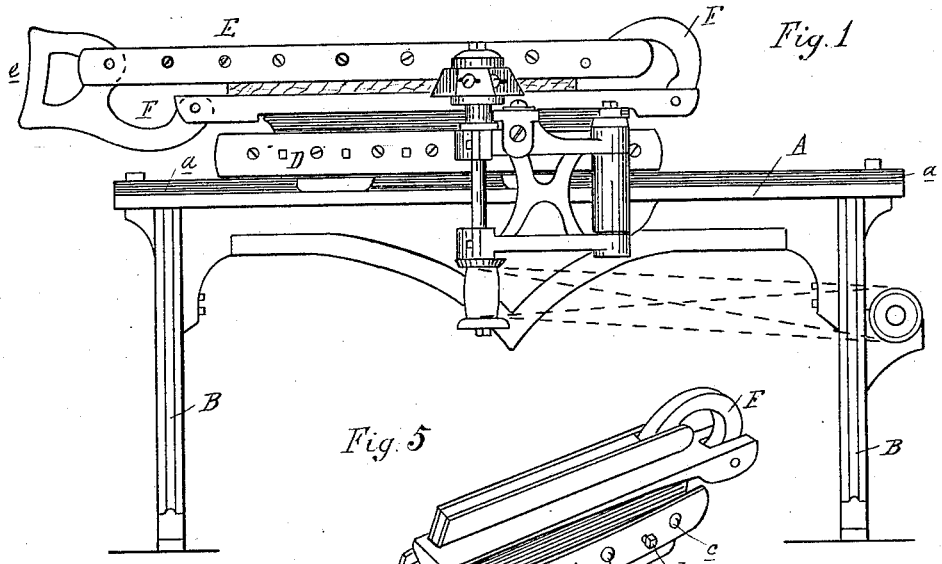


Fig. 5

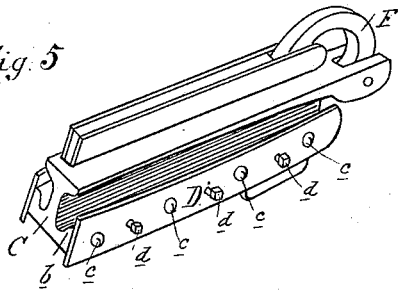


Fig. 2

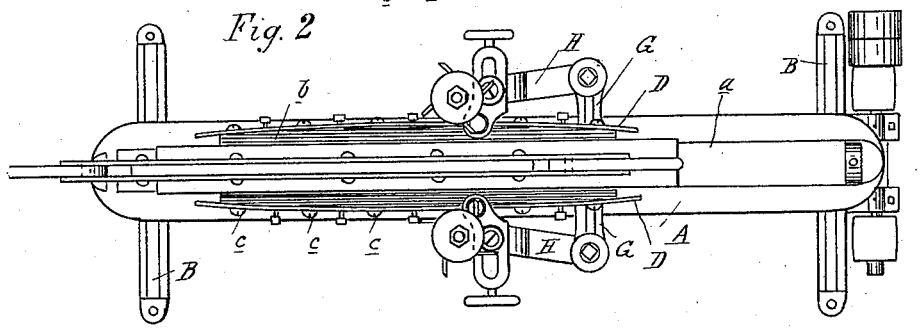


Fig. 3

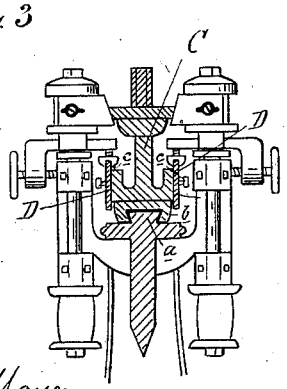
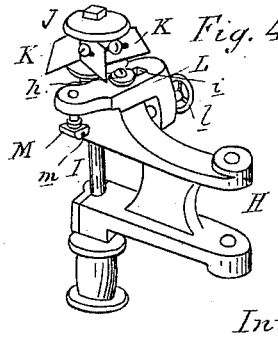


Fig. 4



Attest
J. Paul Mayer
[illegible]

Inventor
Robert W. Tavener
By Phil. S. Sprague Atty

UNITED STATES PATENT OFFICE.

ROBERT W. TAVENER, OF BAY CITY, MICHIGAN, ASSIGNOR OF ONE-HALF TO THE STANDARD MACHINERY COMPANY, OF SAME PLACE.

STAVE-JOINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 304,873, dated September 9, 1884.

Application filed May 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, ROBERT W. TAVENER, of Bay City, in the county of Bay and State of Michigan, have invented new and useful Improvements in Stave-Jointers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in the construction of stave-jointing machines.

The invention consists in a sliding carriage, upon which the stave-blanks are secured, the carriage being adapted to slide upon a suitable bed between revolving cutter-heads; in the peculiar construction of center guides, by means of which the cutters are compelled to advance or recede, so as to form the desired bilge or quarter upon the stave-blanks being operated upon; also, in the peculiar construction, arrangement, and various combinations of the parts, all as more fully hereinafter set forth.

Figure 1 is a side elevation. Fig. 2 is a plan. Fig. 3 is a cross-section on the axis of the cutter-heads. Fig. 4 is a detached perspective view of one of the swinging cutter-head frames. Fig. 5 is a sectional perspective of the sliding carriage, showing the means employed for adjusting the cutter-guides.

In the accompanying drawings, which form a part of this specification, A represents the bed of my machine, which is mounted upon suitable legs or supports, B. Upon the upper face of this bed is formed or secured the dovetail way *a*, upon which the sliding carriage C has a reciprocating movement. The sides of the base *b* of this carriage C are slightly curved, representing in general outline the shape of a barrel-stave. To these curved faces *b* the cutter-guides D are secured by means of the screw-bolts *c*, which are tapped into the base of the carriage, while *d* are set screws or bolts, which are tapped through the guide-plates and rest against the base of the carriage, as is clearly shown in Fig. 5. By these means I am enabled to set the guide-plates for the cutters, so as to compel the latter to form a stave with more or less bilge and quarter. The upper face of the carriage is formed into a bed, upon which the blanks to be operated upon are secured in any convenient manner, the means shown in the accompanying drawings consisting of a locking-bar, E, pivotally connected at each end to the carriage by links F, the locking-bar being raised or depressed by the handle *e*.

G represents brackets, which are rigidly secured upon the bed A, and opposite each other. In the ends of these brackets G, I pivotally secure one end of the swinging brackets H, in the opposite ends of which are properly journaled the vertical shafts or arbors I, the upper ends of which carry cutter-heads J, provided with cutters K.

Upon brackets H are secured adjusting-plates L by means of bolts *h*, which pass through slots *i* in the plates, and are tapped into the brackets. The outer ends of these plates L are provided with downwardly-projecting arms, through which are tapped the regulating-screws *l*, provided with a hand-wheel upon their outer ends, by means of which they can be easily turned. To the inner ends of these adjusting-plates are pivotally secured in any convenient manner the gibs or guides M, in the under faces of which is formed a channel or groove, *m*, which, when the parts are in place, engage with the upper edges of the guide-plates D. The arbors I are adapted to be driven from any convenient power.

In practice the blanks from which the staves are to be formed are secured upon the top of the carriage, which latter is withdrawn to one end of the machine. The proper bevel of the stave is formed by the bevel given to the cutter-knives, while the bilge and quarter is regulated as may be desired by means of the screws *c* and set-screws *d*, and by means of which a greater or lesser curve is given to the guide-plates, and the cutter-knives are adjusted in relation to the guide-plates L so as to produce the width of stave desired. The cutters being in motion, the operator now pushes the carriage along the bed, the cutters cutting the edges of the blanks, while such cutters are compelled to follow the line of the guide-plates and to follow the bilge and quarters on the staves being operated upon in exact counterpart of the outline or curvature of such plates. If it is now desired to produce a still wider

stave with the same bilge and quarter, the swinging brackets merely have to be adjusted outward upon the guide-plates, so that the distance between the cutters will produce the desired width of stave.

If it is desired to form a tongue and groove for tight work, it can readily be produced by the employment of the proper tools upon the cutter-head.

It can readily be seen that saws secured upon the horizontal arbors, the brackets of which would have the same or substantially the same movements as those herein described, may be employed instead of the cutter-heads without departing from the spirit of my invention.

What I claim as my invention is—

1. In a stave-jointing machine, and in combination with the movable cutters thereof, a sliding reciprocating carriage provided with guide-plates, the latter being in positive engagement with said cutters, whereby the latter are forcibly compelled to follow the contour of said guide-plates, substantially as and for the purposes described.

2. In a stave-jointing machine, and in combination with the movable cutters thereof, the sliding reciprocating carriage C, moving on ways on the frame, and having the laterally-adjustable guide-plates D secured thereto, and means for varying the contour of said guide-plates, substantially as and for the purposes set forth.

3. In a stave-jointing-machine, and in combination with a reciprocating carriage provided with laterally-adjustable guide-plates D, cutters journaled in swinging adjustable brackets and controlled by said guide-plates, substantially as and for the purposes specified.

4. In a stave-jointing machine, the combination of the bed A, carriage C, adjustable guide-plates D, secured thereto, brackets G, rigidly secured to the frame, the brackets H, pivotally secured to said brackets G, arbors I, journaled in said brackets H, cutters J, carried by said arbors, adjusting-plates L, and gibs M, all constructed, arranged, and operating substantially in the manner and for the purposes described.

ROBERT W. TAVENER.

Witnesses:
H. S. SPRAGUE,
E. SCULLY.