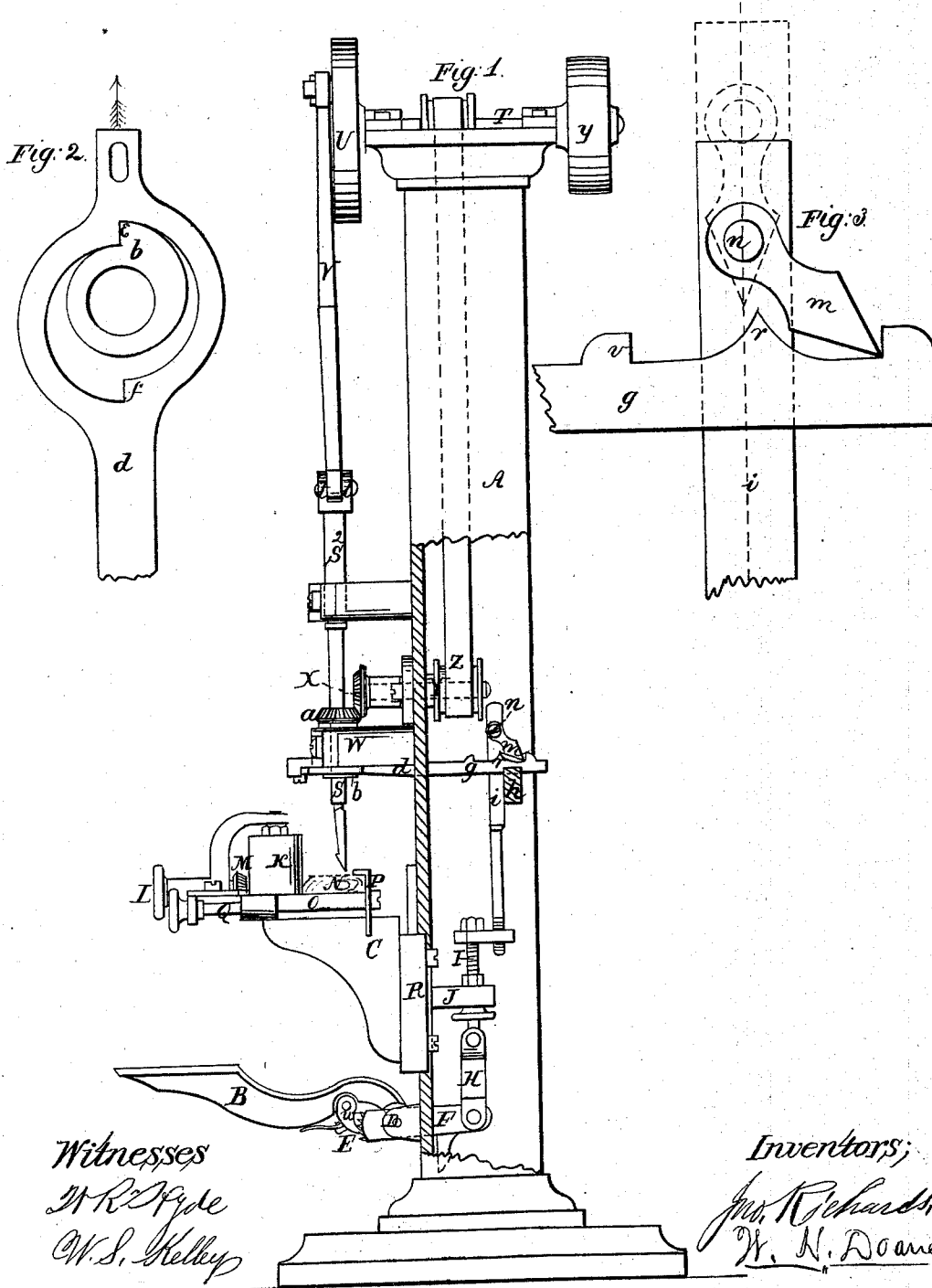


*Richards & Doane,
Mortising Machine,
No. 68,791, Patented Sept. 10, 1867.*



*Witnesses
M. R. Hyde
W. S. Kelley*

*Inventors;
Jas. Richards
W. N. Doane*

United States Patent Office.

JOHN RICHARDS AND WILLIAM H. DOANE, OF CINCINNATI, OHIO, ASSIGN-
ORS TO J. A. FAY & CO., OF SAME PLACE.

Letters Patent No. 68,791, dated September 10, 1867.

IMPROVEMENT IN MORTISING MACHINES.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that we, JOHN RICHARDS and WILLIAM H. DOANE, of Cincinnati, county of Hamilton, and State of Ohio, have invented certain Improvements in Mortising Machines; and we do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of a mortising machine having our improvements, with a portion of the main column removed to show the mechanism within.

Figure 2, an enlarged diagram of the eccentric yoke and cam-hook for reversing the chisel-bar, and

Figure 3 a diagram showing an enlarged view of the mechanism for moving the reversing-bar.

Similar letters of reference on the different figures indicate corresponding parts.

The nature of this invention consists, first, in a novel mechanism for reversing the chisel automatically while in motion, by means of an eccentric yoke, cam-hook, and a pawl to move the reversing-bar alternately in reverse directions; secondly, in the use of a ratchet and pawl for adjusting the treadle so as to produce a greater or less throw of the table, as the nature of the work may demand, such adjustment being instantaneous and more convenient than modes hitherto employed; and thirdly, in an improved manner of feeding the wood to the chisel by means of a frictional roll of gum or other material, accomplishing the functions of what is known as a compound table, with a cheaper and more simple mechanism.

To enable others skilled in the art to make and use our invention, we will proceed to describe the manner of constructing and the mode of operating the same with the aid of the drawings.

In fig. 1 A represents the main column, forming the support on which the machinery is mounted, with the side removed to show the mechanism within. B is the treadle for operating the table C. It is hinged at D, and is adjustable at different heights by means of the pawl and ratchet shown at E, which determines its position with relation to the pivoted lever-piece F, and also regulates the throw of the table, which is moved by the link H and rod I, passing through stem J, which is fastened into the table C, and works in a slot in the front of the post A. K is a feed-roller, of India rubber or other similar material, and is revolved by hand-wheel L and bevel-gear M, the roll resting at the bottom on the face of the match-gear below, which is not shown in the drawing. N is a piece of wood being mortised, and is kept down upon the table-plate O and in proper position by means of the guard P, which adjusts to take pieces of different depths. The piece N is moved by the friction of the roll K in either direction to suit the length of mortise required. Screw Q is to adjust the roll K. The main table-support C is pivoted on the plate R, so as to form angular mortises. S is the chisel-bar, receiving motion from shaft T by means of crank-wheel U and pitman V. S² is a shell carrying the lugs *t*, in which the bar S revolves by means of the reversing device at the lower bearing W, consisting of the gearing X, pulley Y, and belt Z. The hub of the gear *a* forms a shell around the chisel-shaft S, and passes down through the bearing at W, having a feather or spline for revolving the bar S. On the lower or bottom end of this shell is formed a cam-hook, shown at *b*, fig. 2, which works in the yoke *d*, and holds the chisel in the proper position for cutting in either direction, the belt Z meanwhile slipping around the pulley Y. To reverse the chisel the yoke *d* is moved in the direction indicated by the arrow, fig. 2. This releases the hook *b*, and the chisel-shaft instantly revolves until this hook *b* comes in contact with the other stop, *f*, making precisely a half revolution. The yoke *d* is moved by the bar *g* passing through and into the column, as shown. This bar rests upon the cross-piece shown in section at *h*, and on its top is formed the double concave, which will be better understood by referring to the diagram, fig. 3. The rod *i* rises and falls with the table C, and carries the pawl *m*, which swings loose on pivot *n*, and passes alternately on the different sides of the point *r*, moving the bar *g* in different directions at each motion of the table. In fig. 3 the bar is shown as moved to the right. At the next motion of the rod *i* the pawl *m* falls into the position shown by red lines in fig. 3, and as the table comes down passes on the other side of point *r*, striking against the shoulder *v*, moving the bar *g* to the left, allowing the chisel-shaft S to turn half round, as before explained. *y* is the driving-pulley.

Having described the nature of our invention, and the manner of constructing the same, we do not claim

adjusting the treadle of a mortising machine to operate at different heights, this principle being old and applied to both foot and power mortising machines; but what we claim, and desire to secure by Letters Patent, is—

1. The pawl *w*, for adjusting the treadle, arranged and operating substantially as described.
2. The yoke *d* and devices *g*, *m*, *r*, and *z*, for reversing the chisel, as herein set forth and described.
3. The roller *K*, for feeding the stuff to the chisel, operating in the manner and for the purposes described.

JNO. RICHARDS,
W. H. DOANE.

Witnesses:

WM. C. HARD,
W. R. HYDE.