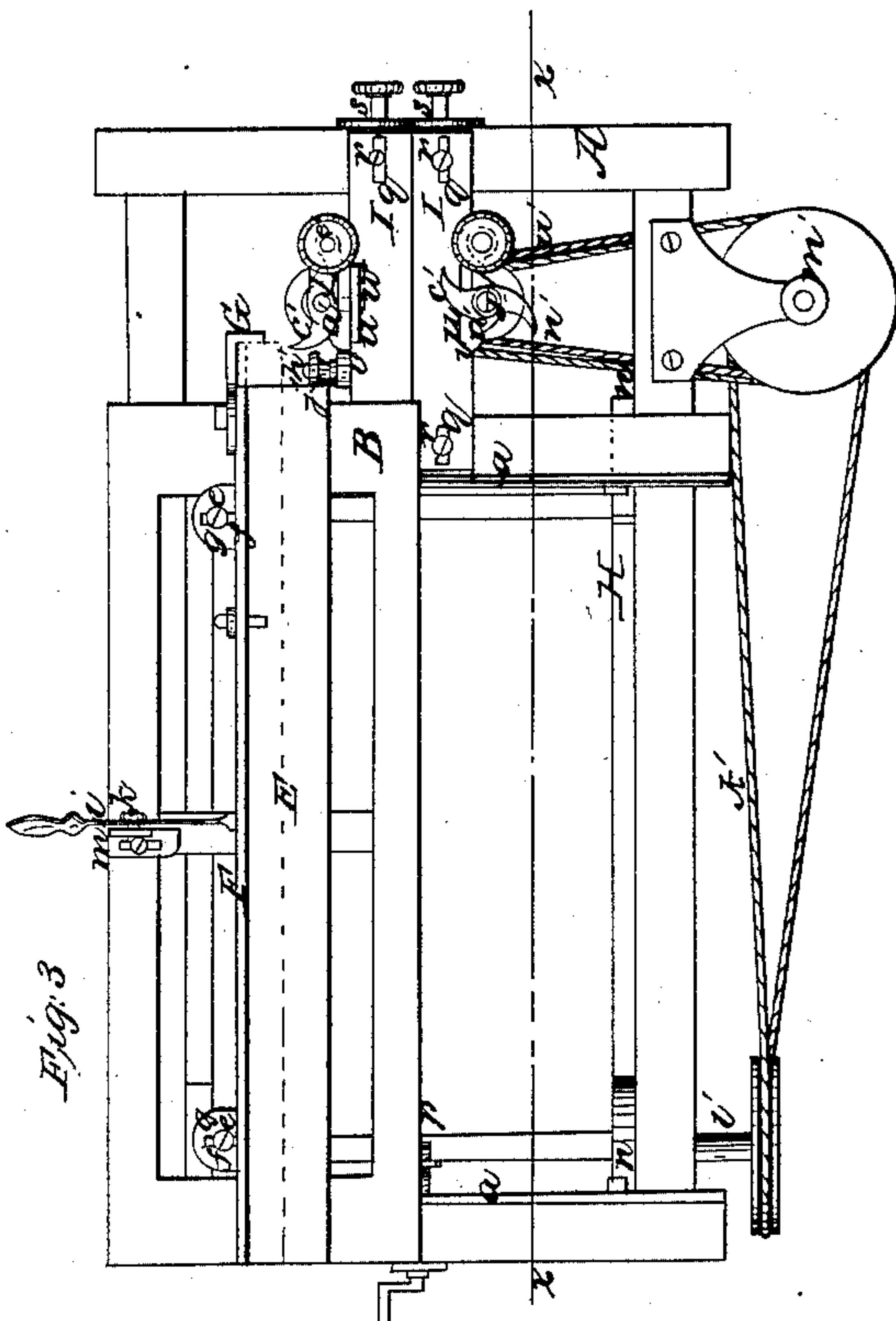
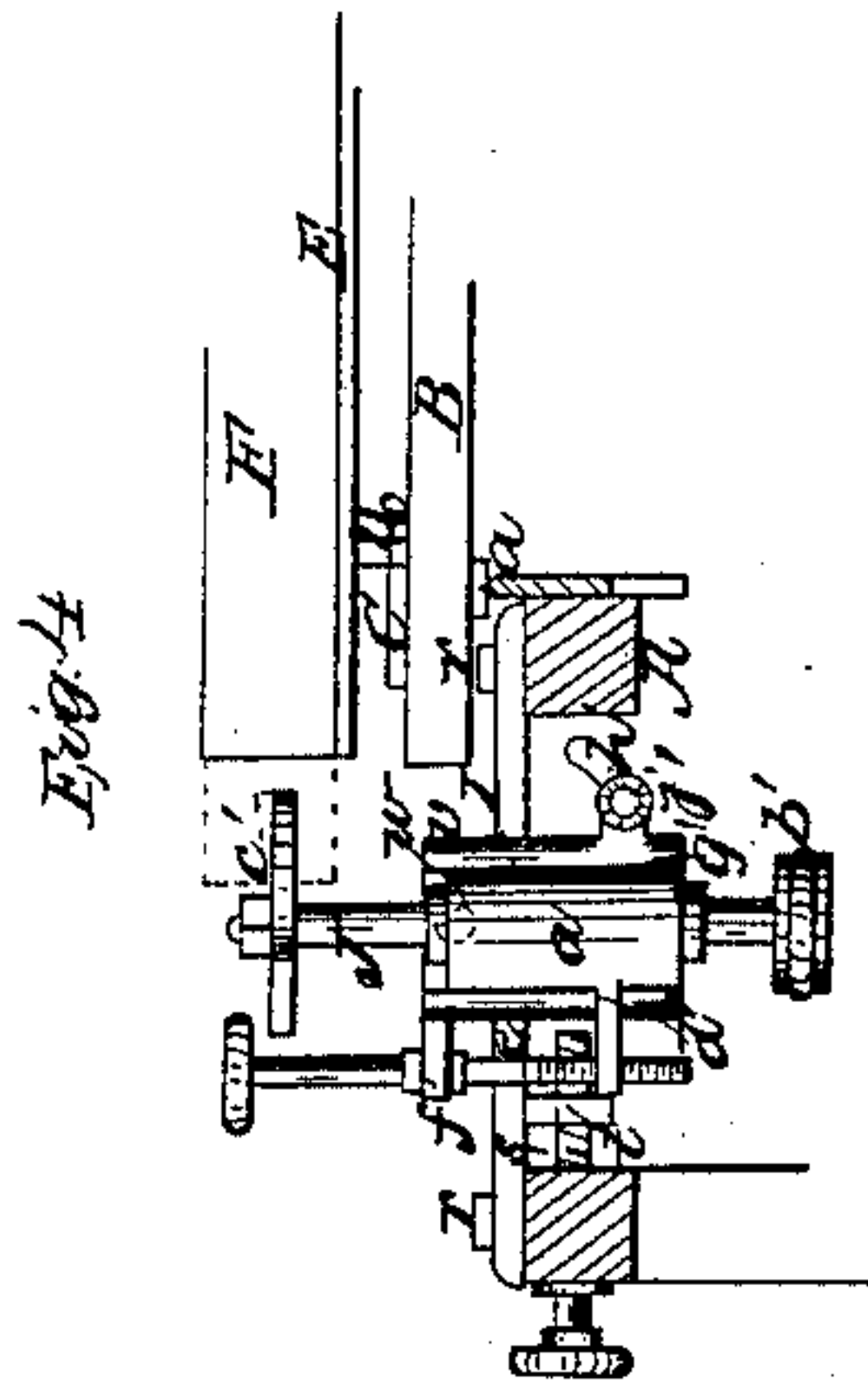
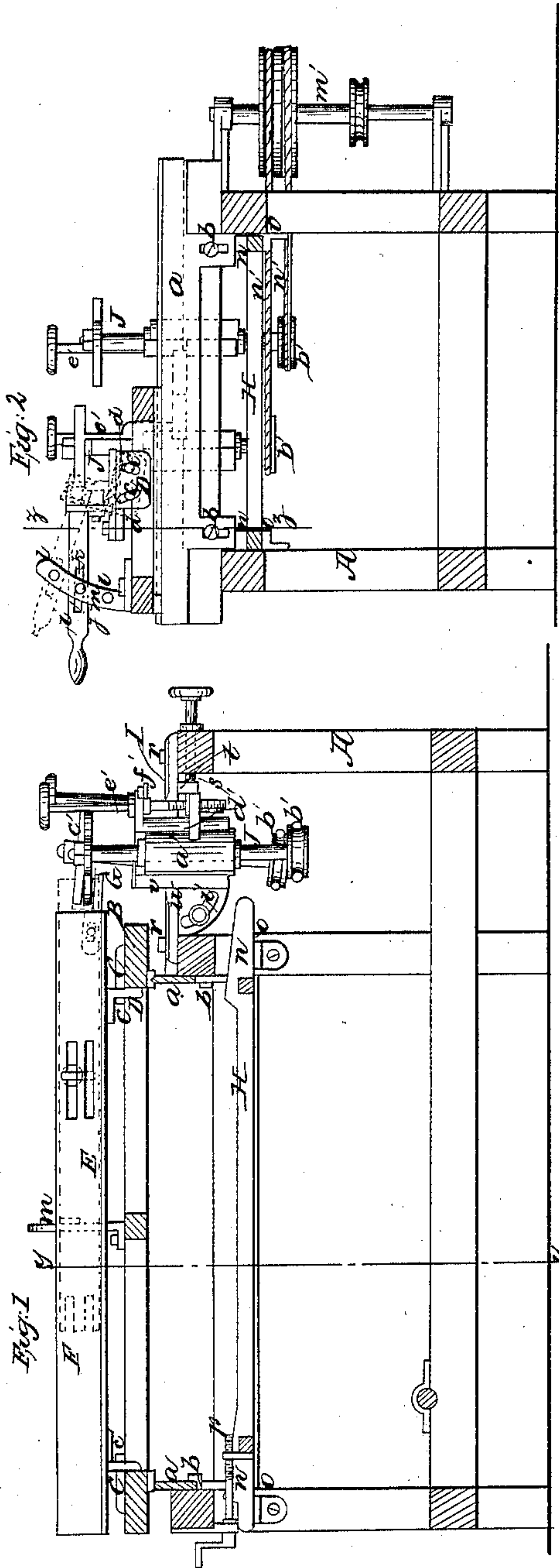


*Bain & Brown,*  
*Dovetailing Machine,*  
*No 30,382,* *Patented Oct. 16, 1860.*



*Witnesses:*  
*J. W. Coombs*  
*R. S. Spencer*

*Inventors:*  
*James Bain*  
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# UNITED STATES PATENT OFFICE.

JAS. BAIN AND SAMUEL C. BROWN, OF RICHMOND, INDIANA.

## DOVETAILING-MACHINE.

Specification of Letters Patent No. 30,382, dated October 16, 1860.

*To all whom it may concern:*

Be it known that we, JAMES BAIN and SAMUEL C. BROWN, both of Richmond, in the county of Wayne and State of Indiana, have invented a new and Improved Machine for Cutting Dovetails; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of our invention taken in the line *x, x*, Fig. 3. Fig. 2, a transverse vertical section of the same, taken in the line *y, y*, Fig. 1. Fig. 3, a plan or top view of the same. Fig. 4, a section of a portion of the same taken in the line *z, z*, Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

This invention is more especially designed for cutting dovetails for window sashes, but it may be used for cutting dovetails for the manufacture of other articles.

To enable those skilled in the art to fully understand and construct our invention we will proceed to describe it.

A, represents a rectangular framing which may be constructed in any proper way to support the working parts of the machine.

B, is a carriage which is placed on ways *a, a*, on the framing A. The ways *a, a*, are placed transversely on the framing and may be retained at any desired height by means of set screws *b, b*. See Fig. 2.

The carriage B, is simply a rectangular frame which has a plate C, secured to each end of it, said plates being each provided with two pins *c, c*, which fit in slots *d*, made in plates D, attached to a bed E, which bed has a longitudinal position on the carriage B, as shown in Figs. 1 and 3.

To the back edge of the bed E, there is attached at right angles a plate F. This plate is secured to a bed E, which bed has a longitudinal position on the carriage B, as shown in Figs. 1, and 3.

To the back edge of the bed E, there is attached at right angles a plate F. This plate is secured to the bed E, by screws *e*, which pass through oblong slots *f*, in lips *g*, at the lower edge of the plate F, and through lips at the back edge of the bed E. This mode of attachment of the plate F, to the bed E, admits of an adjustment of the former laterally on the bed. To one end of

the plate F, there is attached a gage G, and to the back of the plate F, there is attached an elastic handle or arm *i*, which has an oblong longitudinal slot *j*, made in it to receive a thumb screw *k*, which may be fitted in either of a series of holes *l*, in a curved standard *m*, at the back part of the carriage B, see Fig. 2.

From the above description it will be seen that the bed F, may be adjusted in a horizontal or inclined position and retained at any point within the range of its movement by means of the screw *k*, attaching the arm or handle *i*, to the standard *m*.

The ways *a, a*, may be adjusted vertically on the framing A, by means of inclined planes *n, n*, which are attached to a horizontal frame H, placed on guides *o*, in the framing A. The frame H, may be adjusted by a screw *p*, see Fig. 1.

On the framing A, there are placed two horizontal plates I, I. These plates are slotted longitudinally at their ends as shown at *q*, and screws *r* pass vertically through the slots *q*, into the framing A. The plates I, I, therefore are allowed a certain degree of longitudinal adjustment and they are actuated by means of screws *s*, and nuts *t*, the latter being attached to the under sides of the plates and the former passing through an upper end piece of the framing A, see Fig. 1.

To each plate I, there is attached a vertical plate *u*, and to these plates *u*, guides *v*, are secured by pivots *w* the guides being allowed to turn freely on said pivots. The guides *v*, have fitted in them bearings *a'*, which contain arbors J, having each a pulley *b'*, on their lower ends and a cutter *c'*, on their upper ends. The bearings *a'*, have each a horizontal arm *d'*, attached through which a screw rod *e'*, passes. The rods *e'*, have their bearings in arms *f'*, attached to the guides *v*. The guides *v*, have also attached to them arms *g'*, through which screws *h'*, pass—said screws also passing through curved slots *i'*, in the plates *u*. Each screw *h'*, has a thumb nut *j'*, on it.

By this arrangement it will be seen that the arbors J, J, may be adjusted in a vertical or inclined position, see Fig. 1, in which one arbor is shown in an inclined position, and the other in a vertical position.

The cutters *c'*, on the upper ends of the arbors J, may be of S, form as shown in Fig. 3.



The operation is as follows: The stuff to be operated upon is placed on the bed E, and motion is given the cutters  $c'$ , by means of a belt  $k'$ , which rotates from a driving shaft  $l'$ , a vertical shaft  $m'$ , from which the arbors J, J, are rotated by belts  $n'$ ,  $n'$ . In order to cut the two tenons  $o'$   $o'$ , on the stuff as shown in Fig. 2, the bed E, is first inclined so that the edge of one tenon will be cut with a bevel as shown in blue Fig. 2, the bed is then adjusted to a horizontal position so that the stuff as the carriage B, is shoved forward will be presented horizontally to the second cutter. The cutters are adjusted at a proper distance apart in a vertical direction by turning the screws  $e'$ . In order to cut the mortises, the stuff, see Fig. 1, is placed on the bed E, and one arbor J, is inclined so as to cut the bevel.

It is essential that the bed E, be made to

rock on the points or pivots  $c$ ,  $c$ , in order that a proper relative position may be preserved between the stuff and the cutters  $c'$ ,  $c'$ , to cut the proper bevel on the tenon.

Having thus described our invention what we claim as new and desire to secure by Letters Patent is:

1. The arrangement of the guides  $v$ , and bearings  $a'$ , of the cutter arbors J, substantially as shown to admit of the adjustment of the cutters for the purpose specified.

2. The combination of the tilting or adjustable bed E, with the adjustable arbors J, J, arranged for joint operation as and for the purpose set forth.

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SAMUEL C. BROWN.

Witnesses:

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