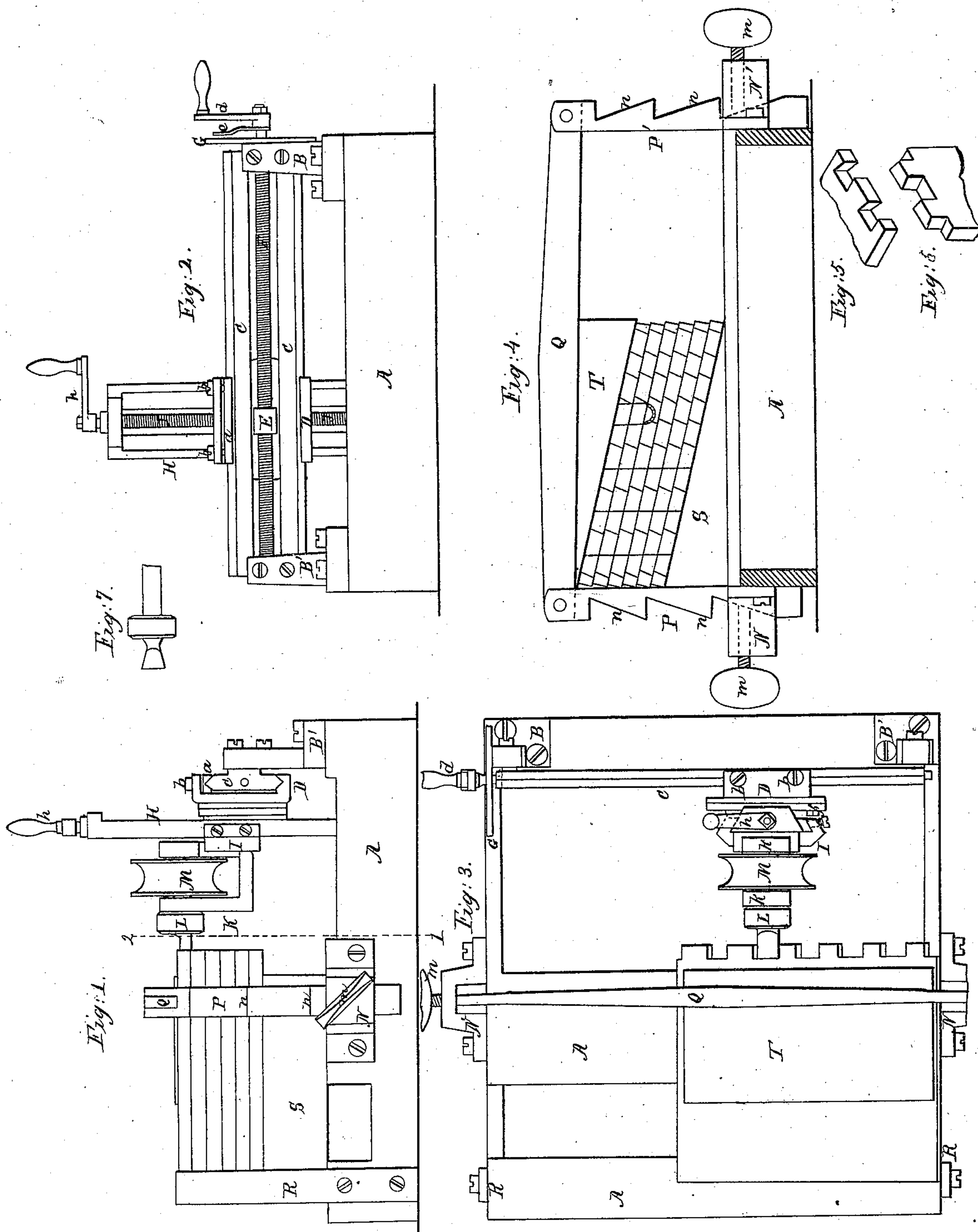


*E. Wight,*  
*Dovetailing Machine,*

*No 14,427,*

*Patented Mar. 11, 1856.*



*Witnesses.*  
*Henry Hovson*  
*William E. Hutton*

*Inventor.*  
*Edwin Wight*



# UNITED STATES PATENT OFFICE.

EDWIN WIGHT, OF PHILADELPHIA, PENNSYLVANIA.

## DOVETAILING-MACHINE.

Specification of Letters Patent No. 14,427, dated March 11, 1856.

*To all whom it may concern:*

Be it known that I, EDWIN WIGHT, of the city of Philadelphia and State of Pennsylvania, have invented a new and Improved  
5 Mode of Cutting Dovetails; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

10 My invention relates to the cutting of dovetails on the edges of boards to be used in the making of boxes, drawers and case-work generally and consists in confining a series of said boards (previously cut and  
15 planed) of the size required, and placed one above the other, to a base plate on which is secured a horizontal guide for receiving a slide the latter having a second guide at right angles to the first for receiving a sec-  
20 ond slide which carries a spindle furnished with a cutter and caused to revolve at a rapid rate by a cord or strap from any adjacent driving pulley. This cutter is brought to the position required for cutting the dove-  
25 tails by operating the horizontal slide and is then traversed downward cutting a groove down the edges of the entire series of boards by operating the vertical slides.

In cutting projecting dovetails on the edges  
30 of the boards the latter are secured to the base plate at such an angle to the course of the cutter, (the shape of which is described hereafter) as to give the dovetails the re-  
quired beveled edges, and in cutting the  
35 counter dovetails into which the former fit, the series of boards are secured at right angles to the course of the cutter which is of a suitable conical form. The whole is so  
40 arranged and constructed as to cut with rapidity, on the edges of a series of boards, dovetails which shall be of exactly the same size and the same distance apart from each other, without the trouble of measuring and marking.

45 In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the drawing which forms  
50 a part of this specification Figure 1 is a side elevation of my improved mechanism for cutting dovetails; Fig. 2, an end view of the same; Fig. 3, a ground plan; Fig. 4, a sectional view on the line 1, 2, (Fig. 1); Fig. 5,  
55 a perspective view of the counter dovetails; Fig. 6, the same of the projecting dovetails;

Fig. 7, a view of the tool for cutting the counter dovetails.

The same letters of reference allude to similar parts throughout the several views. 60

A is the base plate of the machine to which are secured the two brackets B and B' for supporting the longitudinal guide C, the edges of the latter are V shaped for receiving the slide D which is furnished at the  
65 top with set screws *b* for adjusting the packing piece *a*. To the back of the slide D is secured the nut F, which projects into the longitudinal slot in the guide C, through this nut passes the screw F which has its  
70 bearings on each end of the guide. The screw is furnished at one end with a handle *d* by turning which the slide D may be traversed backward or forward at pleasure. To the handle *d* is fixed a pointer *e* so ar-  
75 ranged as to be in contiguity with the dial plate G which is permanently secured to the bracket B. To the slide D is attached by means of bolts *f* another guide H with beveled edges for receiving a second slide I  
80 which has also a nut projecting into the slot of the guide H and through this nut passes the screw J which has its bearings on the top and bottom of the guide, and has a  
85 handle *h* on the top, by turning which the slide I may be traversed up or down at pleasure. The above described portion of my machine is somewhat similar in form and action to the ordinary slides of machines for planing iron. To the slide I is  
90 secured a bracket K, in which revolves the spindle L furnished with a pulley M and so arranged as to receive different cutters for the different dovetails.

N and N' are two brackets attached, one 95 to each side of the base plate A, and furnished with set screws *m*, through these brackets pass the vertical bars P and P' having on the outside any convenient number of inclined planes *n*, to the tops of these  
100 bars are jointed the opposite ends of the cross-bar Q. On each side of the base plate are also secured vertical guide pieces R.

It should be understood that the slides are so arranged that the course of the cutter 105 may (when traversed downward) be exactly perpendicular to the upper plane of the base plate A and that the inside faces of the bars P and P' as well as those of the guide bars R should be correctly at right  
110 angles to the plane of the base.

Operation: When the machine has to be



used for cutting on the edges of boards dovetails similar to those shown in Fig. 6 I loosen the screw *m* in one of the brackets say the bracket *M'* as seen in Fig. 4, so as to raise the vertical bar *P'* and one end of the cross-bar *Q*. I then place on the base plate a wedge shaped block *S* the inclination of which must correspond to the level required on the sides of the dovetails. On the top of the block *S*, and one upon another, I place a series of boards which must have been previously squared and planed to the size required, taking care that the edge of every board shall touch the inside face of the bar *P* and that of the bar *R*. On the top of the boards I now place another wedge shaped block *T* having an inclination corresponding to the block *S*. The bar *P'* is now brought down so that the cross bar *Q* may bear on the top of the wedge *T* and the set screw *m* being turned so that its point shall bear against one of the inclined planes of the vertical bar, the latter is thereby brought down with sufficient force to cause the cross bar *Q* to confine the series of boards to the base plate ready to be submitted to the action of the cutter. The latter, for cutting the dovetails now in question is of the semicylindrical form as seen in the transverse section Fig. 4. The spindle *L* is now caused to revolve rapidly by a cord passing from any adjacent driving pulley around the pulley *M* and the cutter is brought to act on the edges of the series of boards by operating the slides already described, so as to cut grooves down the entire series as represented in Figs. 3 and 4. When a series of grooves corresponding in number to that of the dovetails required are cut it will be observed that the level required for the dovetail is given on one side only, in order to complete the dovetails it becomes necessary to reverse the position of the wedge shaped blocks still taking care however to keep the edges of the boards against the inside faces of the bars *P* and *R*, when the traversing of the cutter by the slides may be repeated so as to complete the required dovetails. As represented in Fig. 4 the first operation, that of cutting one side of the dovetails has been completed and the

wedges having been reversed, the second operation, that of cutting the opposite sides of the dovetails partially completed, the semicylindrical cutter being shown in the act of shaving off the corners left by the first operation.

When the machine has to be used for cutting on the edges of a series of boards counter dovetails as represented in Fig. 5, the said boards are placed flatwise on the base plate *A* with their edges square up against the inside face of the bar *P*, and the former cutter replaced by that represented in Fig. 7. Viewed on the end, this cutter is semicircular and on the side cone shaped with sharp cutting edges. By operating the sides so as to bring this cutter to act on the edges of the series of boards counter dovetails may be cut at one operation without the need of a repetition as in the former instance.

By noting the position of the pointer *e* as regards that of the indexes on the stationary dial plate *G*, it will be seen that dovetails as shown in Fig. 5 and corresponding dovetails as seen in Fig. 6 may be cut on the edges of a series of boards so as to fit each other with the greatest accuracy and with a rapidity hitherto unknown, without the necessity of marking off the edges of the boards as usual.

Having now described the nature of my invention and the manner in which the same is carried into effect, I wish it to be understood that I do not claim the exclusive use of revolving and traversing cutters as they are employed in a variety of machines, but

What I do claim and desire to secure by Letters Patent—

Is the cutting of dovetails of exactly similar size and form on the edges of a number of boards at one operation, by placing the said boards one upon the other, arranging them in the manner set forth or any equivalent to the same, and submitting them to the action of revolving and traversing cutters.

EDWIN WIGHT.

Witnesses:

HENRY HOWSON,  
WILLIAM E. WALTON.