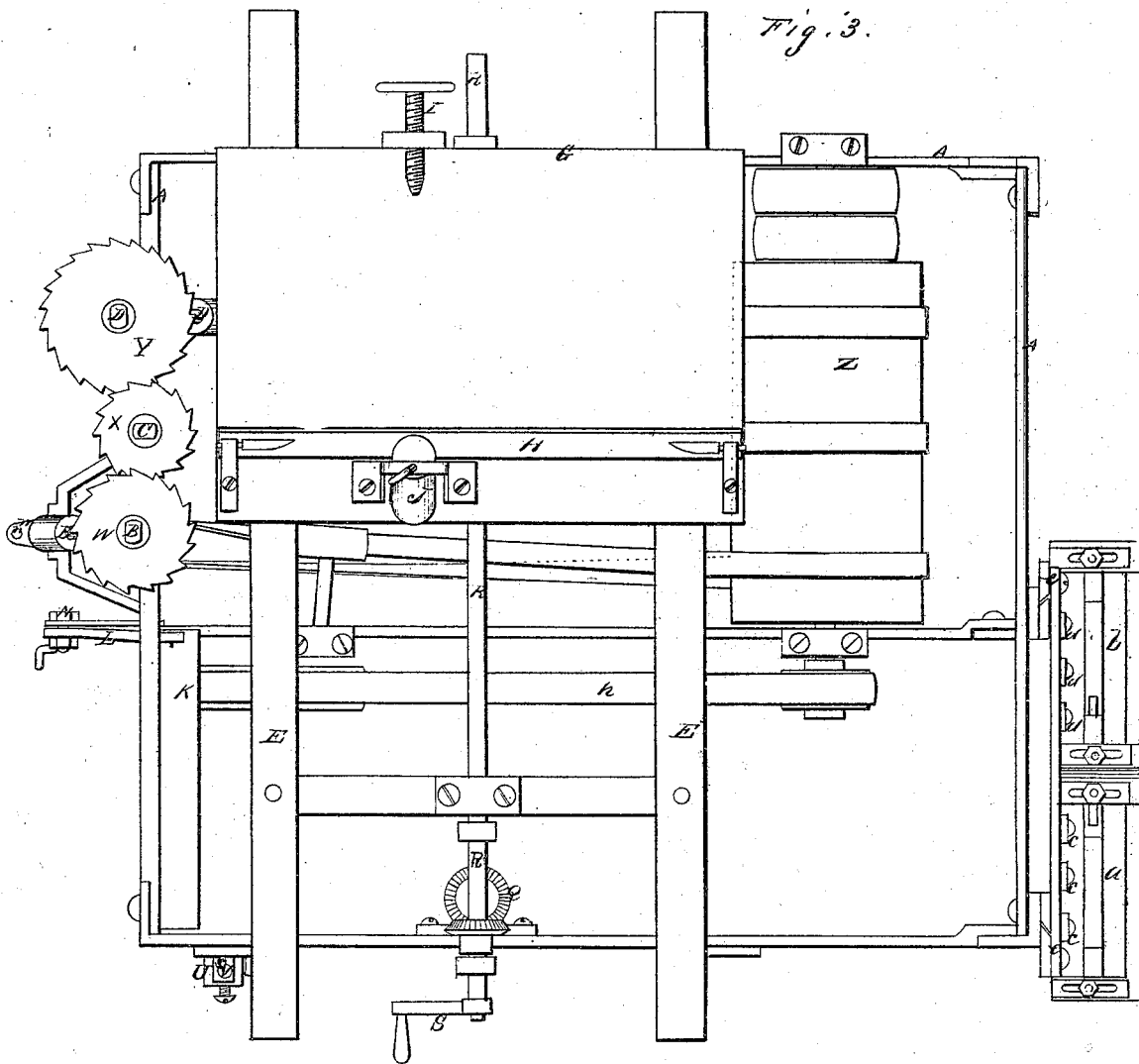




D. Pomeroy,  
Dovetailing Mach.

No. 113,500.

Patented. April 11, 1871.



Witnesses.  
Geo. H. Strong  
J. H. Rummel

Inventor.  
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By his Attys  
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# UNITED STATES PATENT OFFICE.

DAVID POMEROY, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO  
ELANDER HEATH, OF SAME PLACE.

## IMPROVEMENT IN DOVETAILING-MACHINES.

Specification forming part of Letters Patent No. **113,560**, dated April 11, 1871.

### *To all whom it may concern:*

Be it known that I, DAVID POMEROY, of the city and county of San Francisco, State of California, have invented an Improved Dovetailing-Machine; and I do hereby declare the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements with further invention or experiment.

My invention relates to an improved machine for cutting dovetails, to be used for joining the sides of boxes, drawers, &c.; and it consists, first, in the use of a series of saws, which are mounted on arbors which stand at different angles with each other, so that by passing the side or sides to be dovetailed across the face of the saws the dovetail will be cut and cleaned out, ready for use.

It further consists in the employment of an eccentric cylindrical cam, in combination with the side of the sawing-table, so that when the table is filled with boards to be cut they can all be canted and held at any desired angle which is necessary to give to the tenon the required shape.

The device also consists in the use of a gage for the ends of the boards and a series of adjustable gages for determining the position and number of dovetails to be made in the board or boards, together with a convenient mechanism for the adjustment.

In combination with these devices I have constructed a machine for dovetailing the fronts of drawers, &c.

Referring to the accompanying drawing for a more complete explanation of my invention, A A is a suitably-constructed frame for supporting the different parts of the mechanism, having on one side the three saw-arbors B, C, and D, standing at different angles, as shown. The guides or ways E, upon which the sawing-table F travels, are placed across the frame A, so that the open end of the table passes directly in front of the edge of the saws. This table has two sides, G and H, the side G being secured vertically on the table, and having one or more holding-screws, I, passing through it for the purpose of securing the contained

boards in place. The opposite side H of the table is hung on pivots at each end, as shown, and a cylinder, J, has a shaft passing through it from end to end, but at an angle with its axis, so that the whole forms a sort of cam, which is placed against the middle of the side H, being supported by suitable standards. By revolving this cam it presents various angles to the side H, which is thus caused to move on its end pivots and stand at any desired angle to suit the required tenon.

The boards to be cut are set on their edges, resting against the side H, and securely held by the screw I. A rocking plate, K, is supported by end pivots and operated by a lever-arm, L, so that its upper edge can be tipped forward against the ends of the boards on the table, and thus gage them to just the right position before they are clamped.

The lever L has a set-screw, which moves in an arc, M, so that it may be permanently secured at any angle; or it may be left loose, and an independent one, N, just above, can be secured in the arc M, so that by bringing the lever up to touch it the plate K will be brought against the ends of the boards to gage them, after which it may be allowed to drop back out of the way till the next lot is put in.

The ways E, upon which the table travels, are secured to vertically-moving guides O O at each end, and these are adjusted up or down by screws P, which are made to operate in unison by means of the bevel-gears Q and the shaft R, which connects them, and is operated by a crank, S.

A lug, T, projects from the guides O at some suitable point, so as to move along beside a series of adjustable blocks, U. These blocks are set at a distance apart vertically equal to the space between the dovetails to be made, and are secured to a rod, V, by set-screws.

By turning the crank S the table will be raised or lowered, and can be set for each dovetail successively by bringing the lug T to correspond with one of the blocks U. All this being arranged, it only remains to push the table along on the ways E. This carries the ends of the boards which are secured on the table across the edges of the saws W, X, and Y, these saws being secured to the upper

ends of the arbors B, C, and D, before described.

The arbor B stands with its lower end to the left of a vertical line in the view Fig. 1. This causes the inner edge of its saw W to be depressed, and this saw will consequently cut the lower side of the dovetail-mortise.

The arbor C stands vertically, and its saw *x* will cut out the middle of the mortise. The arbor D has its lower end to the right of a vertical line, which causes its saw Y to incline its inner edge upward, and this will cut the upper side of the mortise, thus completing a line of mortises through as many boards as may be placed on the table.

The table being adjusted by the lugs T and U for the next line of mortises, the table is again pushed along the ways, and thus as many mortises as are desired can be made for any depth of drawer.

As the arbor D stands with its lower end under the machine, it will be necessary to make the saw Y larger than the others, so as to set it out a little and not let it interfere with other parts. The saws may be driven at a high rate of speed by belts from the drum Z or other suitable arrangement.

The lower ends of the arbors turn in journals *m*, which slide up and down, and are adjusted and held in place by screws *n*, as shown.

In cutting the boards the tenons are secured at any angle in the table, as before described, and the two saws W and Y are removed. One or more saws are then secured to the vertical arbor C, so as to make the tenon of the required size, and the table with its boards can then be passed across in front of the edge of the saw, thus completing the work.

In order to cut drawer-fronts in which it is desirable to conceal the dovetails, I construct two adjustable inclined planes, *a b*, with suitable clamps for holding the boards, and secure the planes to some convenient part of the frame.

A set of chisels, *c c* and *d d*, is secured to a vertically-moving frame, *e*, and are thus made to rise and fall over each of the inclined tables.

The board (which is first sawed to the proper depth) being laid on one table, one side of the tenons can be cut. The board is then moved to the other table, and the other side is cut, the chisels being so set as not to cut entirely through.

The frame *e* has two connecting rods or pitmen, *f f*, which attach to two cranks, one on each end of the operating-shaft *g*, and by this arrangement the frame and chisels have great steadiness and power of motion, with no side drag when working at one side.

The chisels are driven at a slow rate by belts *h* and *i* from pulleys suitably arranged for the purpose.

The whole machine is rapid and efficient.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The turning or canting side H, with its end pivots, in combination with the cam J, when constructed and operating substantially as herein described.

2. The cylindrical cam J, with its angularly-placed shaft, either graduated or not, substantially as herein described.

3. The rocking plate K, with its lever L, and the arc M and set-screw N, when used as a gage, substantially as herein described.

4. The ways E and the guides O, adjustable as shown, and the gage consisting of the lug T and the adjustable blocks O, the whole constructed and operating substantially as described.

In witness whereof I have hereunto set my hand and seal.

DAVID POMEROY. [L. S.]

Witnesses:

GEO. H. STRONG,  
WM. H. RUNNELS.