E. Heath,

Dovetailing Mach.

No. 104,147. Patented June 14, 1870.

Fig. 1.

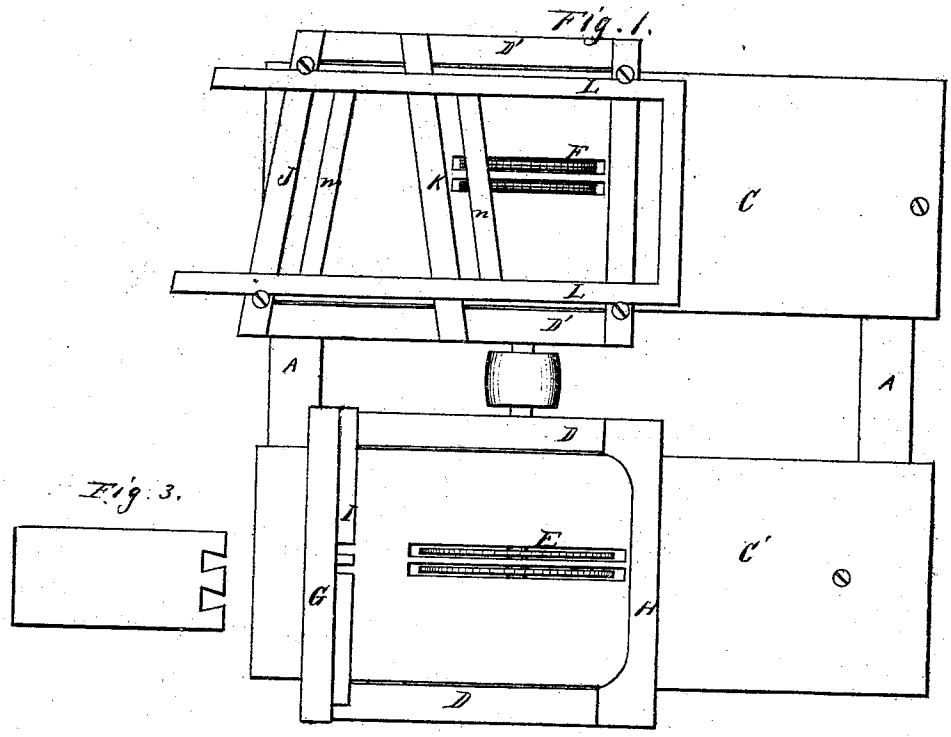


Fig. 3.

Fig. 2.

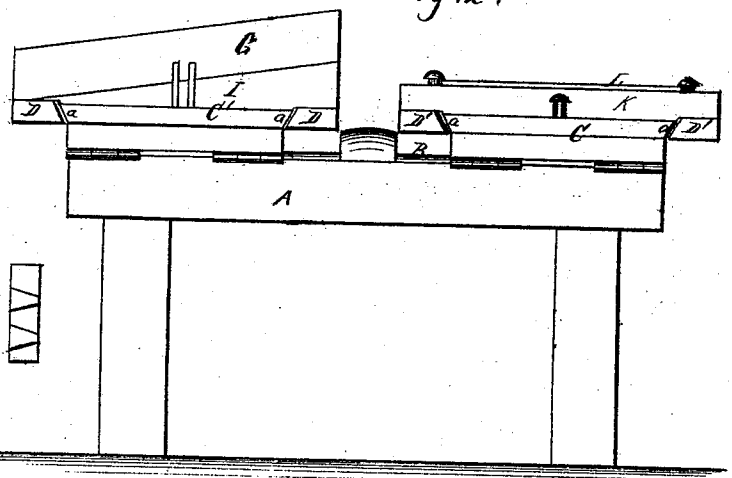
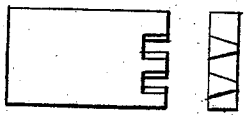


Fig. 4



Witnesses.
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ELANDER HEATH, OF SAN FRANCISCO, CALIFORNIA.

Letters Patent No. 104,147, *dated June* 14, 1870.

IMPROVEMENT IN DOVETAILING-MACHINE.

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

To all whom it may concern:

Be it known that I, ELANDER HEATH, 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 without further invention or experiment.

My invention relates to an improved machine for forming the dovetail joints of drawers or boxes; and

It consists of two sliding frames, moving on tables, one of which serves to dovetail the end, and the other the side pieces of a box, without the use of swinging guides, numerous gauges, and beveled tables, the whole being easily fitted, so as to operate on common sawing-tables.

The saws for the two can be fastened to the same mandrel, or they may have separate mandrels.

The two tables, also, may stand side by side, or be separated, and may be used for all ordinary purposes of sawing, by simply removing the sliding frames.

The sliding frame for the side pieces has a tapering guide fastened to one of the cross-beams, so as to give the desired angle to the tenon, the board standing upon this guide, while the frame slides at right angles with the saw-mandrel.

The end pieces are formed on a similar sliding frame on the other table, but the guides in this case stand at an angle with the mandrel.

Referring to the accompanying drawing for a more complete description of my invention—

A is the supporting-frame of the tables, the saw-mandrel extending across it, and carrying as many sets of saws E and F as may be desirable, two being shown in the present case.

The tables C C′ may be simply the ordinary sawing-tables, to be found in mills, having such devices as may be convenient, so that my invention can be used, or the tables may be fitted up especially for this work, in large establishments.

In the present case, the edges of the table are beveled, as at *a a*, so that the side pieces D D of the sliding frames may keep them securely in place, and allow them to move easily.

The frame for dovetailing the side pieces works upon the table C′, and consists of the side pieces D D and the cross-pieces G and H, the whole rigidly fastened together at right angles.

The cross-piece G has a tapering guide-piece I, fastened to it, as shown, and having an inclination to the table corresponding with the bevel of the mortise to be cut.

The board to be mortised is set with its end standing on the sloping guide I, and the frame is pushed forward over the saws, which stand vertically at right angles to the table.

As the board stands at a slight angle with the saw, one side of the mortise is cut to a similar angle.

The board is then turned around, and the frame again passed over the saw, when the other side will be cut, and the mortise remain as in fig. 3.

In order to form the dovetail tenons in the end pieces, the other frame has the cross-pieces J and K, which lie horizontally, and connect the side pieces D′ D′, fastened at an angle to a vertical plane, as shown.

The board to be fitted is set upon its end, and brought against the guide-piece J. The frame is then pushed over the saw, as in the other table, thus forming one side of the tenon.

The frame being drawn back, the board is placed against the other guide K, and the saw forms the other side of the tenon, as in fig. 4.

By these two constructions, I am enabled, first, to use my tables for all ordinary sawing purposes, or to apply my invention to any plain sawing-table, with little expense, and, secondly, to avoid and do away with all swinging guides, which soon get loose and out of order, and necessitate two sets of gauges, and the resetting of the guide for each side of the dovetail.

When the sides of the drawer are beveled together, it is desirable to form the front end pieces so that the dovetail shall not show.

In order to do this, I construct a sliding frame, L, the bars *m* and *n* of which correspond with the guides J and K of the frame over which they stand.

This frame is moved forward on the lower frame, and set by screws or other suitable device, so that the bars or guides *m n* stand in advance of the guides J K.

The end of the board which is to be beveled and dovetailed rests against the bar J, and the side against the bar *m*.

In this position the whole is moved over the saws, and the dovetail formed on one side. The same operation repeated with the other guides *n* and K finishes it.

When the table is fitted up for this work especially, a great number of saws and cutters may be used, so that all the dovetails of any box can be cut at once by two motions of each frame, leaving nothing to be done except to fit them together.

The tables may be hinged at one end, and the opposite end raised and lowered by screws, to regulate the depth of the mortise and tenons.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. In combination with an adjustable sawing-table, C, the rigid sliding frame, consisting of the oblique guide-pieces J and K, connected by the bars D′, substantially as described.

2. In combination with an adjustable sawing-table, C′, the rigid frame, consisting of the side pieces D, the cross-piece H, and the cross-piece G, provided with the guide-piece I, substantially as described.

3. The combination, with the guide-pieces J and K, of the adjustable sliding frame, holding the guides *m* and *n*, substantially as and for the purpose set forth.

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

ELANDER HEATH. [L. S.]

Witnesses:

WM. GERLACH,

W. R. BOONE.