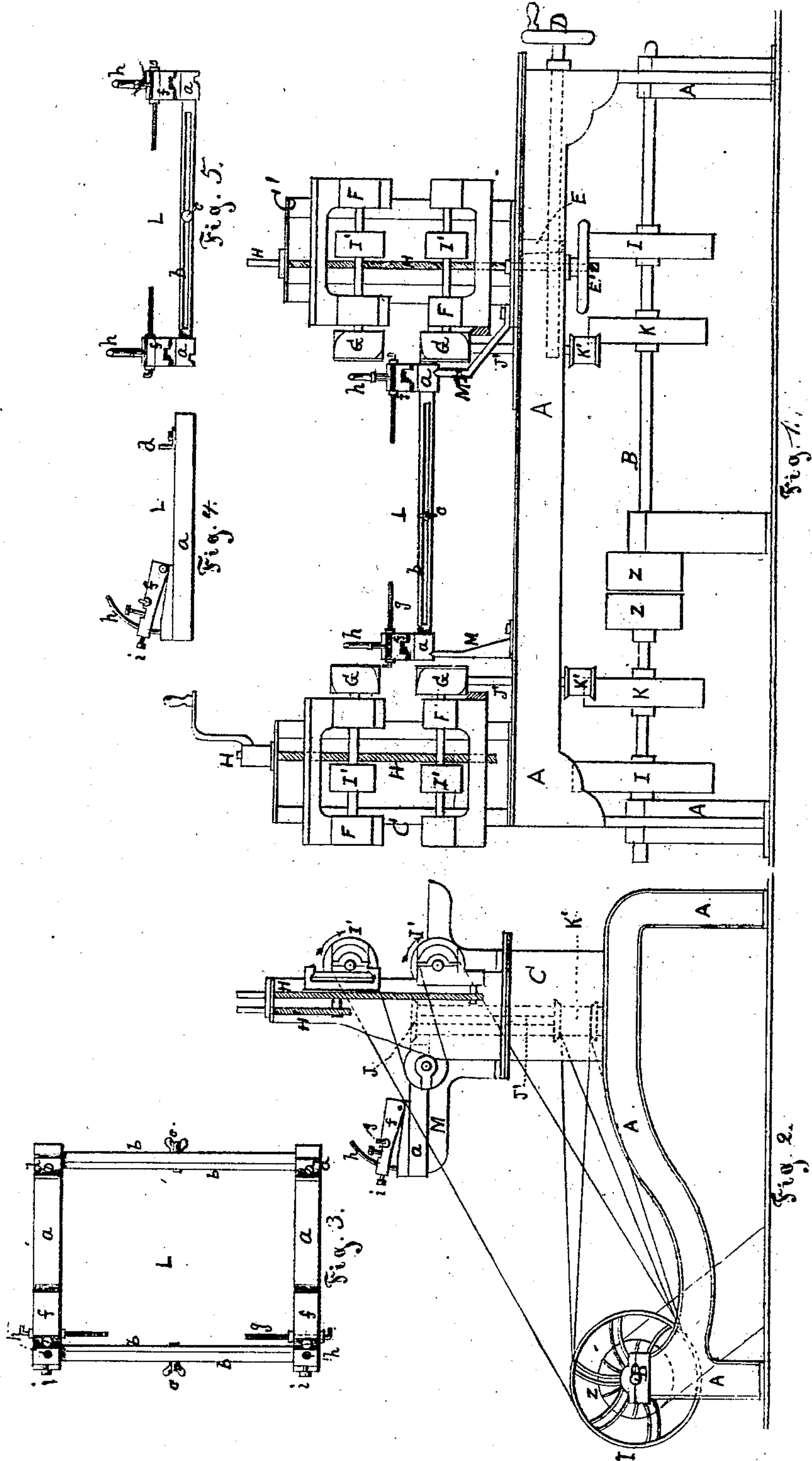


F. G. Chapman,
Dovetailing Machine.

No. 107,222.

Patented Sep. 13. 1870.



Witness
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FRANK G. CHAPMAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO DENNIS BEACH, OF SAME PLACE.

Letters Patent No. 107,222, dated September 13, 1870.

IMPROVEMENT IN MACHINES FOR TENONING WINDOW-SASH.

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, FRANK G. CHAPMAN, of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Sash-Tenoning Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming part of this specification.

Figure 1 is a front elevation of a tenoning-machine, to which my improvements are applied;

Figure 2 is an end view of the same;

Figure 3 is a plan view of the table carrying the dovetailing lift;

Figure 4 is an end view, and

Figure 5 a side view of the same.

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

My invention has for its object to tenon one or both ends of a sash-rail, and cope and dovetail the tenons at one operation; and, to this end,

It consists, primarily, in the construction of the table carrying the sash-rail, as will be hereinafter more fully described.

In the accompanying drawing—

A A A is the frame of the machine, carrying the main driving-shaft B, and the operating parts.

C and C' are uprights, placed opposite to each other upon the frame, the one C being firmly secured thereto, near one edge, and the other C' adapted to be moved back and forth, along the top of said frame, in line with the upright C, by means of the operating-screw D, which works through a projection, E, upon the under side of the upright C', as shown by dotted lines, fig. 1. This projection travels in a slot formed in the bed or top of the frame A, as will be readily understood.

The upright is locked or secured firmly in the desired position by means of the screw and hand-nut E', shown in fig. 1.

F F are boxes carrying the shafts of the cutter-heads G, and are arranged two upon each upright, one above the other.

The boxes upon each upright are capable of independent vertical adjustment, to regulate the distance apart of the cutter-heads, by means of the hand-screws H H', shown in figs. 1 and 2.

The cutter-heads are driven from the main shaft B by means of belts passing around the pulleys I upon the cutters, and I' upon the shafts of the cutter-heads.

J are the coping-heads, on a line, or nearly so, with the lower cutter-heads G, and rotating horizontally upon the vertical shafts J'.

One of the coping-heads is shown by dotted lines, fig. 2.

They are also driven from the main shaft by belts passing around the pulleys K K'.

Z Z are fast and loose driving-pulleys on the main shaft A, operating in the usual manner.

L is the table for carrying the sash-rail to be operated upon, and is arranged for operation between the two uprights C C'.

The end pieces *a a* of the table are grooved upon their under surfaces to fit and slide upon the guide-ways M M', the first of which is firmly secured to the frame A, near the upright C, and the latter attached to and traveling with the upright C'.

The frame is composed of two parts, so that it can be extended to conform to the position of the uprights, with relation to each other, and for this purpose the arms *b b* are slotted, those of one part sliding upon those of the other.

They are also provided with set-screws *c*, by which the frame is locked securely when extended or contracted.

d d are stops upon the end pieces *a a*, and

f f are adjustable lifts upon the opposite ends of said pieces.

The sash-rail to be operated upon is first placed upon the table, longitudinally of the same, resting against the stops *d d*, the table being drawn to the front of the machine.

It is then pushed back, by hand or otherwise, carrying the ends of the rail over the lower cutter-heads G, and past the coping-heads J.

This operation cuts and completes the face side of tenon, including the coping.

The rail is then placed upon the lifts *f f*, with the shoulders of the tenons bearing against the adjustable gauges *g g*, and the table moved to the front of the machine, carrying the tenon beneath the upper cutter-heads G, which form the bevels or dovetails upon the same.

The lifts are adapted for adjustment upon the side pieces *a*, by means of the segments *h* and set-screws *i*, and the inclination given to the lifts by this means determines the bevel or dovetail of the tenons.

The gauges *g* are made adjustable for adaptation to various lengths of tenons, while the whole table is made adjustable to conform to the adjustability of the upright C', for the purpose of accommodating sash-rails of different lengths.

Having thus described my invention,

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

1. The table L for dovetailing and tenoning-machines, provided with adjustable lifts *f* for deter-

mining the bevel of the dovetails upon sash-rails, substantially as described.

2. The adjustable table L, provided with the adjustable lifts *f*, stops *d*, and adjustable gauges *g*, for the purpose specified.

3. The sliding table L of a dovetailing and tenoning-machine, provided with the adjustable lifts *h*, and made adjustable longitudinally, to permit the forma-

tion of tenons and dovetails simultaneously upon both ends of sash-rails of different lengths, substantially as described.

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Witnesses:

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