T. E., A. & E. King,

Dovetailing Machine.

No. 21,503. Patented Sep. 14, 1858.

Fig. 2.

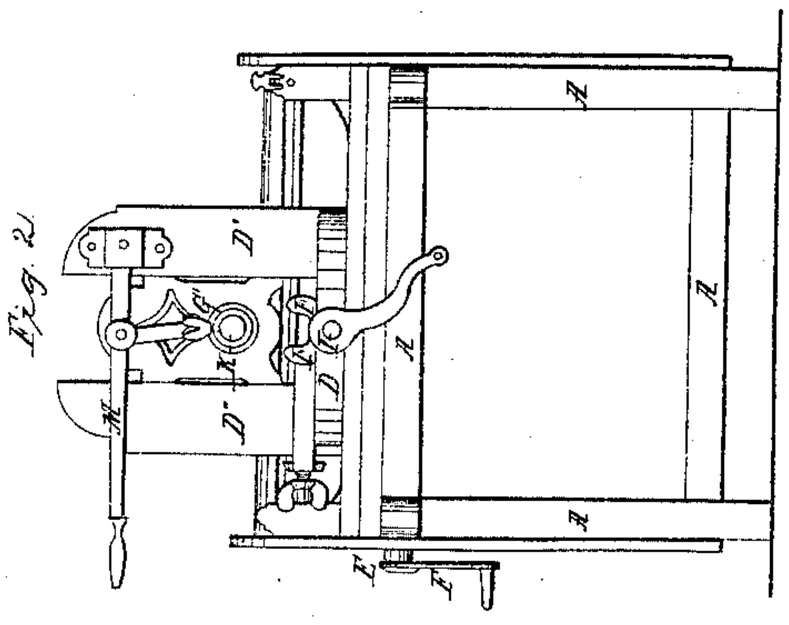

Fig. 9.

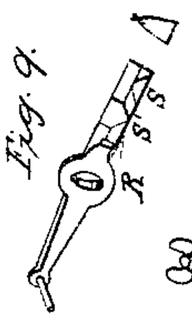

Fig. 7.

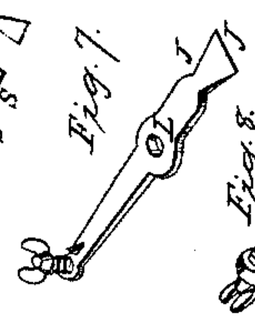

Fig. 8.

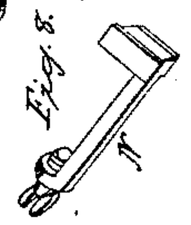

Fig. 3.

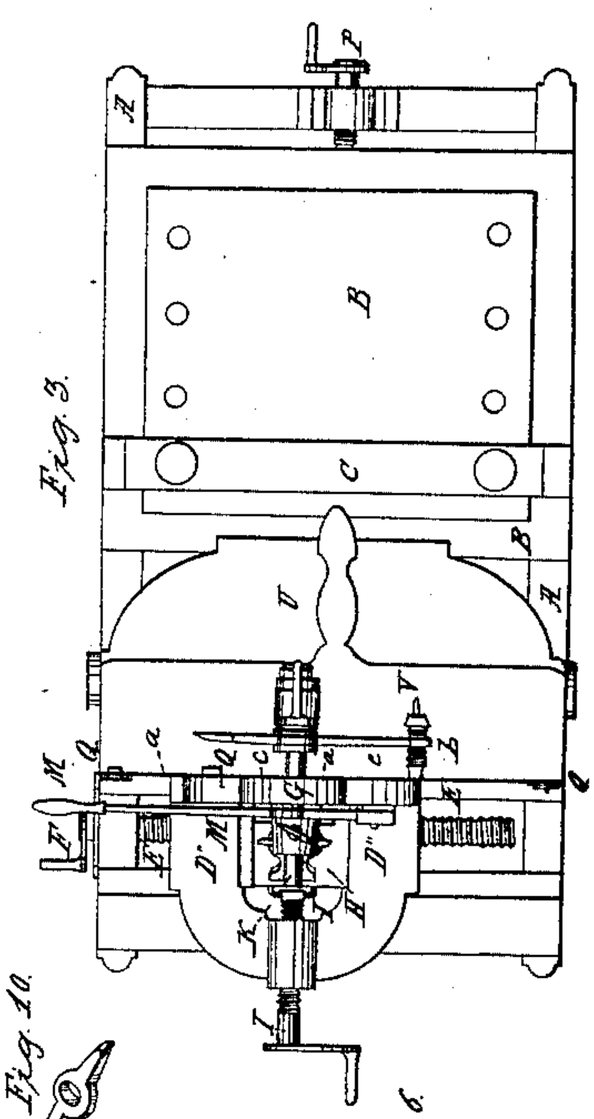

Fig. 1.

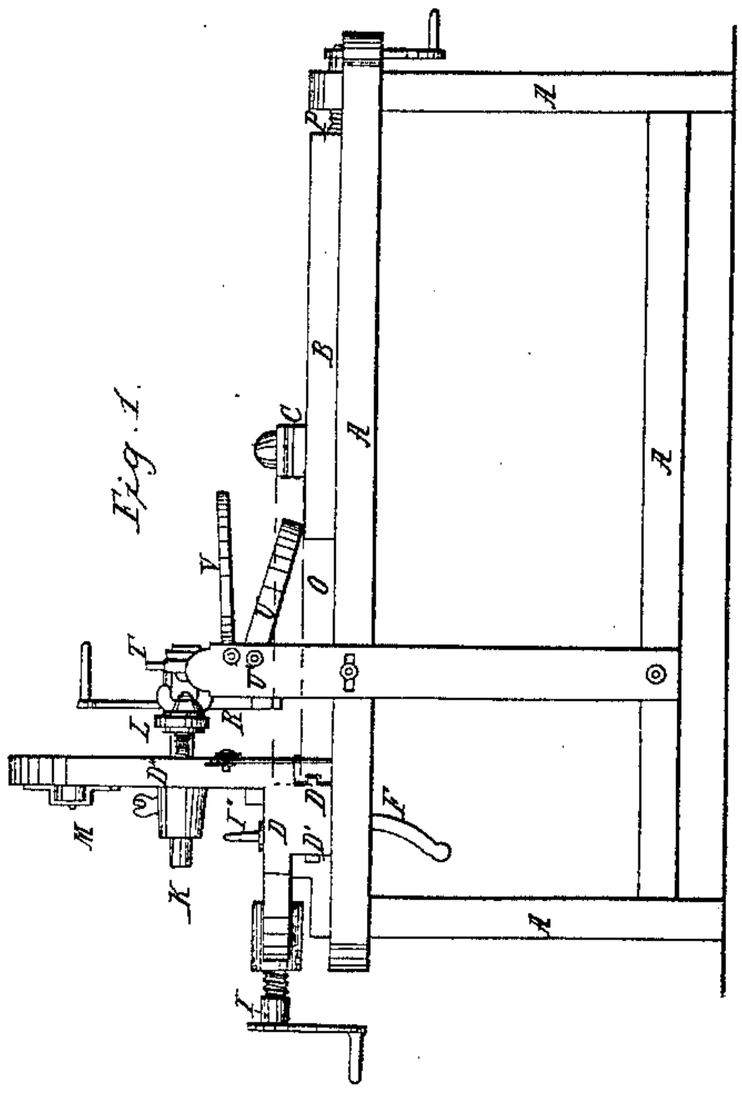

Fig. 10.

Fig. 4.

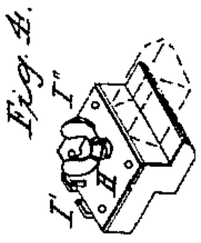

Fig. 6.

Fig. 5.

UNITED STATES PATENT OFFICE.

T. E. KING, ALEXANDER KING, AND EDWIN KING, OF CHERRY VALLEY, OHIO.

MACHINE FOR CUTTING DOVETAILS.

Specification of Letters Patent No. 21,503, dated September 14, 1858.

To all whom it may concern:

Be it known that we, T. E. KING, ALEXANDER KING, and EDWIN KING, of Cherry Valley, in the county of Ashtabula and State of Ohio, have invented new and useful Improvements in Dovetailing-Machines; and we do hereby declare the following to be a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of our improved dovetailing machine. Fig. 2 a front end view, and Fig. 3 a top view. The other figures are sectional views.

Like letters refer to like parts in the different views.

A represents the frame. This may be made of wood or iron, and of suitable dimensions for the work required, say five feet long, two feet four inches high, and three feet wide, the other parts being in proportion.

The nature of our invention consists in such a construction of parts and arrangement of devices that the work usually performed by the use of the saw and chisel, in dovetailing, cabinet work, such as drawers &c., can be done with more accuracy, and greater facility, than it can be done by hand.

The process consists in the performance of two operations, first of cutting the mortises or gains in the drawer fronts, and second of cutting the pegs in the drawer ends.

The material operated upon is first dressed to a proper thickness, and width, and the ends squared in the usual manner, the front of the drawer is then placed upon the table B, Figs. 1 and 3, and the support C, properly adjusted. The tools that perform the work are attached to a headblock D, which works upon ways across the head of the frame. These ways are shown at D′, in Fig. 1. The head block D, is moved upon the ways, that is transversely across the frame of the machine, by a driving screw and crank seen at E, E, in the several figures in which E represents the screw and F the crank. Between the standards D″ of the headblock, is a cross head G, seen in Figs. 2 and 3, which carries the instruments or tools that perform the work of cutting the mortises or gains in the drawer fronts. These tools are represented in section in Figs. 4, 5, 6, and 7. Fig. 4 represents a crosshead working horizontally in the headblock D, and seen in place at H, Fig. 3. This crosshead is driven forward and backward by a screw I, working in the headblock, the same being represented in the several figures. The front of this screw is provided with a groove which is embraced by a metallic collar seen at I; Figs. 3 and 4.

The instrument or tool that cuts into the end of the drawer front, is seen detached in Fig. 5. This is placed in the position indicated by the red lines in Fig. 4, and held in place by the grip Fig. 6, being pressed upon it by the thumb screw I″. This tool Fig. 5, is made of thin steel plate, and the end having a cutting edge is easily forced into the end of the wood, by the action of the screw I. The wood thus divided and compressed within the tool Fig. 5, is cut off by another tool L, seen detached in Fig. 7. This tool is simply a chisel, with its sides sharp and thin, and becoming narrower from the edge upward, as seen at J, J, in Fig. 7. This chisel is attached to an adjusting rod K, Figs. 1, 2, and 3, and seen at L, in Figs. 1, and 3, placed in a horizontal position, for it can be turned from a vertical to a horizontal position, when not in use.

The tool, Fig. 7, is moved in an upward and downward stroke, by a lever M, acting upon the crosshead G. A cutting gage N, seen detached in Fig. 8, is attached to the headblock D, and cuts the end of the drawer front to a uniform thickness.

The manner in which this machine operates, as far as described, is as follows: The drawer front, after being suitably prepared, as above described, is placed in the machine in the position represented by the red lines at O, Fig. 1, and the headblock properly adjusted by means of the screw E. The tool, Fig. 5, is then forced into the end of the drawer front, by means of the screw I, acting upon the crosshead H, and when this is withdrawn, the chisel L is forced down by means of the lever M, acting upon the crosshead G, at the same time by turning the screw E, a little, in both directions, the acute angles of the chisel L, are caused to cut the acute angles of the mortise cut by the tool Fig. 5. The drawer front, during this operation is held firmly in place, by means of the screw P, acting upon the table B, and the broad lever U, whose fulcrum is at U′, which presses firmly upon the inside of the drawer front. When one gain, or mortise has been

cut, and the lever M raised, by turning the screw E, the head block D is carried forward, the distance for the next mortise. In order that this distance may be uniform, we introduce a graduated rod or bar Q, seen in Fig. 3. This bar has notches at uniform distances, as seen at *a*, *b*, *c*, *d*, *e*, *f*, Fig. 3. A spring Q′, is attached to the headblock D, and serves to indicate the position of the head-block upon the graduated rod Q. For the purpose of cutting the end pieces, a tool R, seen in Fig. 9, is used. This is attached to the rod K, and is seen at R, Figs. 1 and 3. The tool R, has two cutters seen at S, S′, Fig. 9, made of thin blades of steel, and having the proper angle to cut the peg of the end pieces. The peg is cut off by the tool seen in Fig. 10, a portion of which, is also seen at T, Fig. 1. An end piece of the drawer, after being properly dressed, is placed upon the lever U, which is preserved in a horizontal position nearly by having the back end rest upon the support C, and is firmly held in place by the grip V, and the cutters S, S′, are caused to pass in succession through the end piece, thus cutting the sides of the peg, the tool T, Fig. 10, cutting off the peg. The lever M, being raised again to its original position, and the screw E turned, the headblock D, is carried forward, until the spring Q′ rests in the next notch in the graduated rod Q, and the same operation is performed as before and like results produced.

What we claim as our invention and desire to secure by Letters Patent, is—

1. The parts shown in Figs. 4, 5, 7, and 8, arranged and operating as described, for the purpose of cutting the mortises or gains in the drawer fronts.

2. We also claim the instruments shown in Figs. 9 and 10, arranged and operating as specified for the purpose of cutting the end pieces of drawers, substantially as set forth, these several devices being arranged to operate conjointly, in the manner and for the purpose set forth.

T. E. KING.
ALEX. KING.
EDWIN KING.

Witnesses:
E. F. ALLAMAN,
A. P. STEELE.