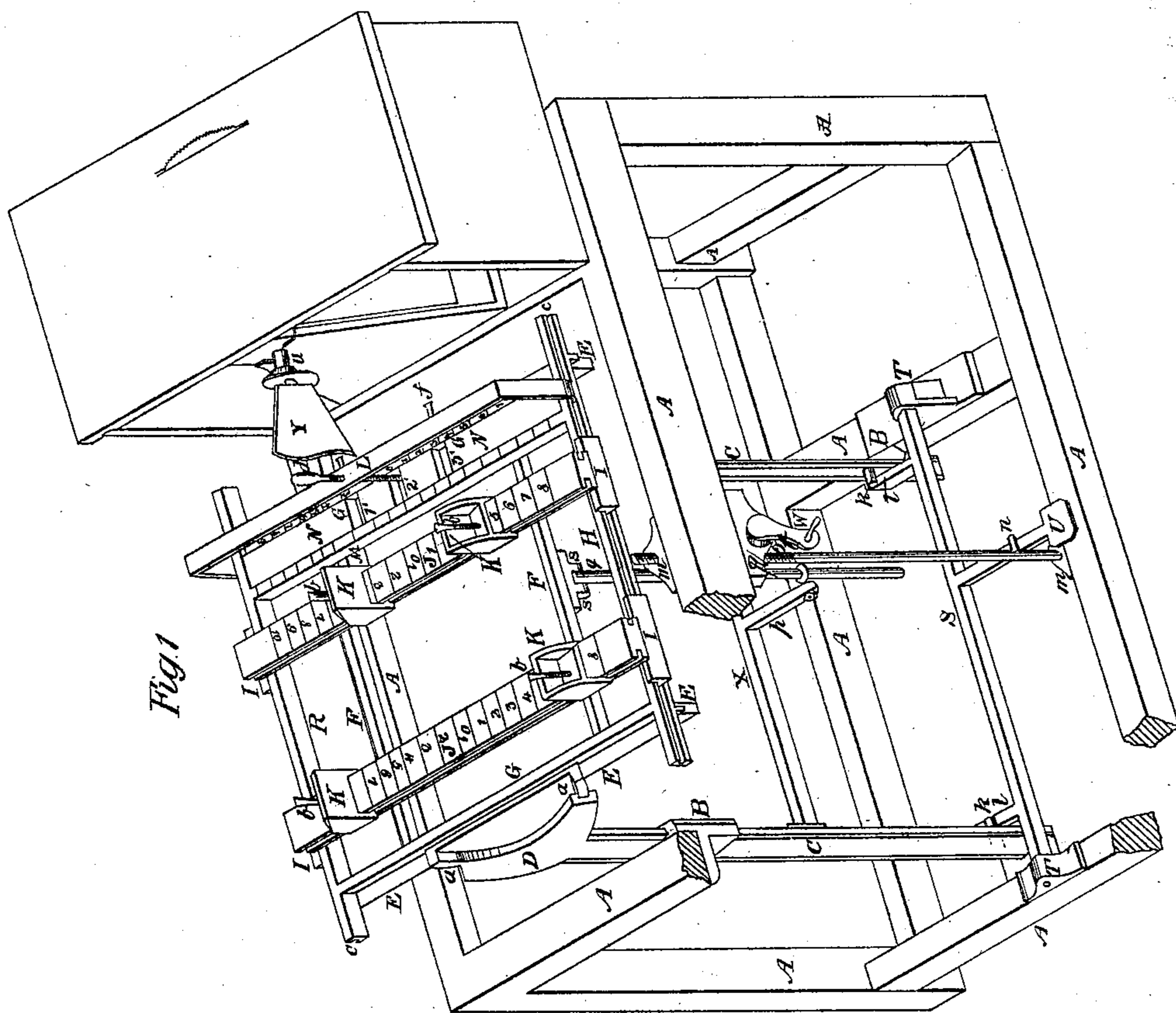
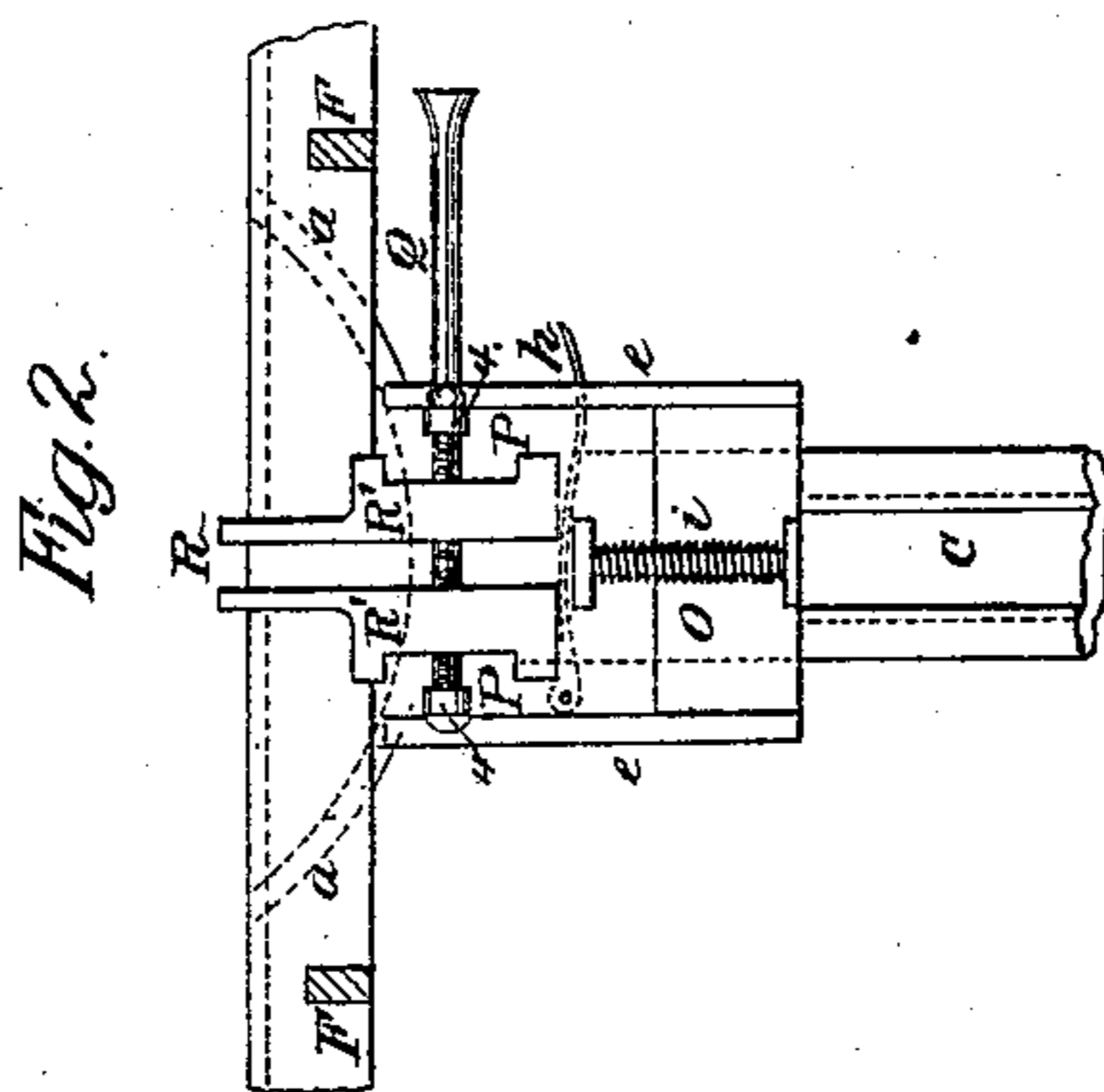


L. A. Orcutt,
Dovetailing Machine,

Dovetailing Machine,

N^o 15,301.

Patented July 8, 1856.



UNITED STATES PATENT OFFICE.

LYSANDER A. ORCUTT, OF ALBANY, NEW YORK.

DOVETAILING-MACHINE.

Specification of Letters Patent No. 15,301, dated July 8, 1856.

To all whom it may concern:

Be it known that I, LYSANDER A. ORCUTT, of Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Machines for Cutting Dovetail Mortises and Tenons; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part thereof, in which—

Figure 1, represents a perspective view of the machine, with a portion of the frame cut away to show the parts behind it. Fig. 2, represents a portion of the machine not seen in Fig. 1, which will be specially referred to in the description.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, in connection with the drawings.

A, represents a substantial frame for supporting the operative parts of the machine.

B, B, are metallic guides firmly secured to the frame, so as to afford a permanent support to the two grooved bars C, C, which are to slide up and down therein, or be held to, as the kind or quality of work to be done may require. On the tops of these two bars C, C, are two segments D (one only being seen) in the opposite faces of which segments, are cut segmental grooves, into which snugly fit segmental tongues *a, a*, arranged on the cross pieces E—one only being seen. The cross pieces E, are connected by the bars F, F, which make with said cross pieces E, a rectangular frame, supported by the tongues *a, a*, one at each of its ends, in the segmental grooves made in the pieces D; and this frame has a double movement viz: a vertical one with the bars C, C, and a rocking or canting movement in the segments D, on said bars C, C.

In grooves or ways, cut or otherwise made on, or in, the cross pieces E, move similarly formed ways made on the pieces G, G, which lie immediately over the pieces E. The pieces G, G, are connected together by side pieces H, H, and these also constitute a quadrangular frame, which can slide laterally, on the frame underneath it and on which it rests. This second frame composed of the pieces G and H has three movements viz: the vertical, and the rocking ones which it receives from the frame on which it

rests, and the independent lateral movement just above mentioned on said frame.

Grooves *c, c*, are cut upon the outer sides of the two side pieces H, into which fit, and move, suitably constructed tongues on the blocks I, I, which are permanently attached to the graduated bars J, J, extending across from one of the side pieces H, to the other. On these graduated bars J, J, are movable jaws or clamps K, K, which can be slid along and held to any desired position by the set screws *b, b, b, b*, passing through them. L, is another clamp or brace extending over from one side piece H, to the other and is provided with projecting pieces or flanges which take into the grooves *c*, in said side pieces, and also, with a set screw *d* for holding down, the material to be wrought upon, to the bed or table composed of the pieces G, H, heretofore termed a frame. M, is an additional cross bar extending from one side piece H, to the other, and is parallel, and in close proximity to, the front cross piece G, between which two pieces M, G, is inserted a notched or mortised pattern N, provided with such open spaces 1', 2', 3', as shall correspond with the distance that the dove-tails are to be apart.

Underneath the front bar E, (see Fig. 2) is a plate O, fastened to, and moving with said bar E. This plate O, has flanges *e, e*, turned upon its side, and between these flanges moves vertically a sliding piece P, which has upon it lugs 4', 4', through, and in suitable threads in which, operate a double threaded, or a reverse-threaded screw bolt Q, which carries and works the variable dog R. This dog R, is composed of two pieces R', R', which can be spread apart, or drawn together at pleasure by the right and left screw threaded bolt Q; and the object of this variable dog is to enter the openings 1', 2', 3' in the pattern N, and thus hold the bed and piece upon it to the proper position to receive the dove tail. The pattern N, is made removable so as to adjust the machine for variable work, and when the proper pattern is introduced, it may be held by the set screw *f*. On the back of the sliding plate P, is connected a lever *h*, the farther end or fulcrum of said lever being in the plate O. By this lever *h*, the plate P, and the dog R, are drawn down, and in being drawn down they contract a helical spring *i* braced between two lugs, one on the plate P,—the

other on the stationary plate O, and when the lever is let go, the spring throws the dog and plate up again, to chuck the piece upon which the dove tail is to be cut.

5 A bar S, is supported in boxes T, by its journals, so as to move or roll therein. These boxes are supported on the bottom crosspieces of the frame A. Upon the bar S, near each of its ends, are arms *l*, which
10 take under studs *k*, *k*, in the upright bars C, C; and at or near the center of the bar S, on the side opposite to the arms *l*, is a foot treadle U, so that the operator by his foot, can raise up the whole table, or let it down
15 at pleasure.

A screw rod V, is so arranged as to be moved up and down through bearings or boxes *m*, *m*, at its top and bottom, and a stud *n* on said rod bears upon the foot
20 treadle U, so that the table or frame instead of being operated by the foot, may have a more accurate adjustment by means of said rod V.

W, is a crank, which may have upon it a bevel gear wheel, taking into a similar bevel gear, and nut on the screw part *o* of the rod V, and thus by merely turning the crank W, the table can be raised or lowered at
25 pleasure and with the greatest accuracy.

30 For regulating the canting of the table, and holding it while the dovetail is being cut a contrivance of the following construction may be used. A bar X, is permanently connected to the two vertical pieces C, C, having upon it an arm *p*, and on the arm a dead eye *r*, through which a rod *q* connected
35 to the piece F, of the table or frame at *s*, passes; a set screw *t* passes through the dead eye *r* against the rod *q*, so as to hold the table horizontally, when it is desirable
40 to hold it in that position. When the table is to be canted to a certain distance, then the set screw is loosened, and a collar or stop of any adjustable description is placed upon
45 the rod *q*, so that when said collar or stop strikes against the dead eye *r*, the table can move no farther—this gives uniformity to the inclined sides of the dove tails.

Y, is the cutter, which is made to fit into
50 a mandrel *u*, and is made removable for the substitution of other cutters of such size and form as the particular work to be done may require. The mandrel and cutter may be rotated by any of the common modes of
55 running rotating cutters, and for convenience a circular saw *v* may be added to the machine.

The operation of the machine is as follows: Arrange the four slides or chucks K,
60 on the pieces J at such distance apart as will receive the plank or board on which the dove tails are to be cut, and secure it there by the clamp L. A notched pattern

N, having openings in it at such distances apart as it is required to have the dovetails, 65 is then placed between M and G, and there secured by the set screws *f*. The variable dog R, being adjusted to the notches or openings in the guide N, enter said notches and hold the work while it is being cut. 70 The width of the cut may be varied to any size larger than the cutter, by varying the movable dogs, and passing the cutter twice through, and this variation allows the work to be fitted together, in the most accurate 75 manner. When the dove tail is being cut the table is secured in a horizontal position by the set screw *t*, and rod *q*; and when the counter or tenon is being cut, I place collars or stops on said rod *q*, and loosen the screw, 80 said collars being so placed, and at such distance apart as will give an angle corresponding with that of the dove tail—then cant or rock the table each way, and pass the material to the cutter twice and the 85 tenon or counter is cut. The center of the circle, of which the segments D, are arcs, is at the upper surface of the table, so that in canting the table either way, the cut in the underside may not necessarily be any wider 90 than the cutter. By placing the left hand slide on which the stuff to be dovetailed lies, at the same distance from the end of the cutter, as the length of work is required to be, I save all the trouble of laying out the 95 work, as it feeds up with the greatest uniformity. Different shaped cutters are used in cutting the dove-tail and the tenon or counter. The stuff is raised up by the treadle U, so as to be higher than, or above 100 the cutter, and then let down past the cutter, which takes out a dovetail of its shape—the tenon or counter being formed by the wood left between the cuts. The double frames or carriages, the upper one being graduated 105 from its center, enables any one to so place and regulate the stuff, and bring it under the action of the cutters, as to do very rapid, and very accurate work.

Having thus fully described the nature of 110 my invention what I claim therein as new and desire to secure by Letters Patent is—

1. The combination of the double frames or carriages, for producing the canting or rocking, and the vertical, and horizontal mo- 115 tions herein described for cutting dove-tails, and tenons or counters, substantially in the manner set forth.

2. I also claim the variable dog R, and pattern N, for spacing, regulating, and 120 holding the stuff under the action of the cutter as herein set forth.

L. A. ORCUTT.

Witnesses:

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