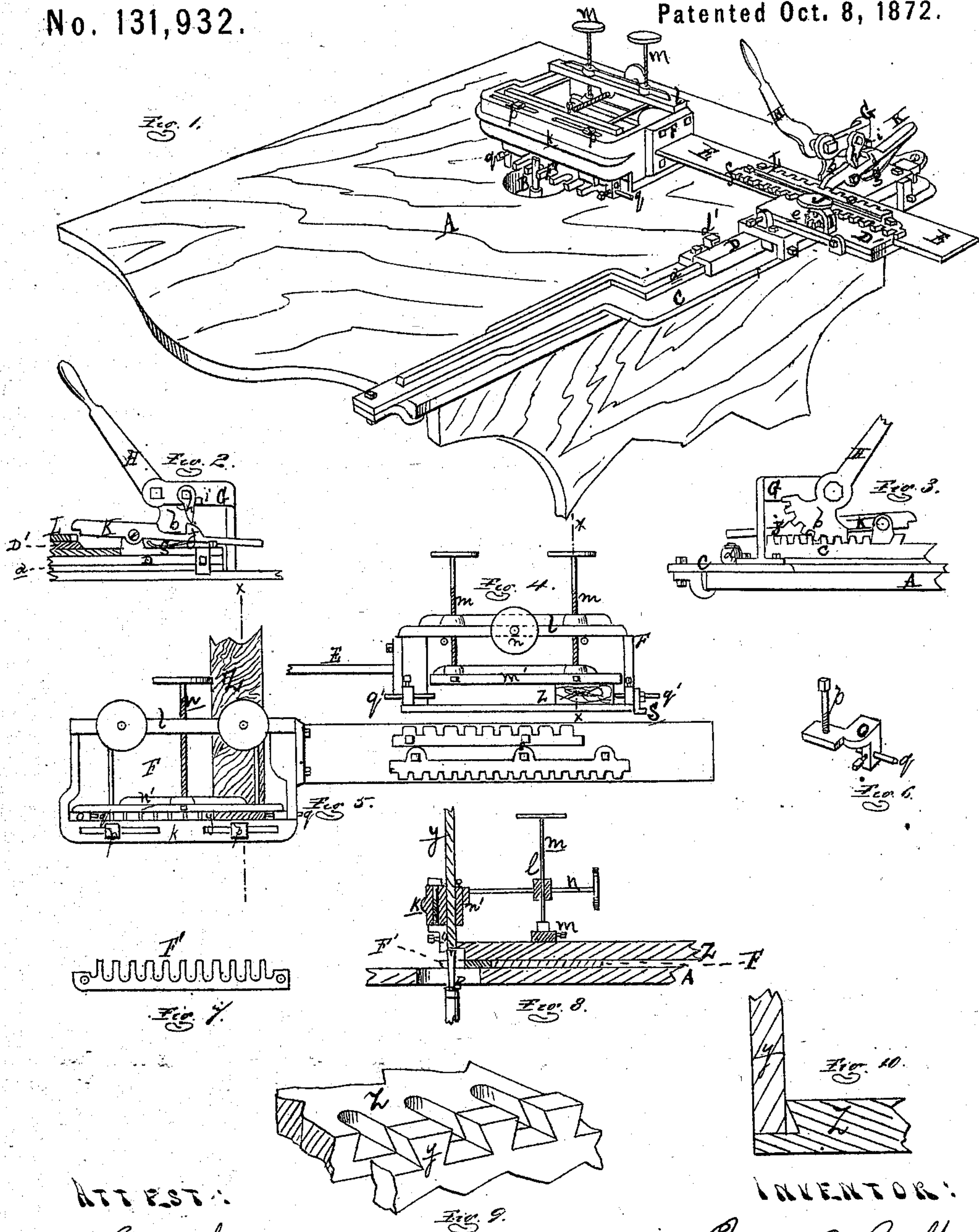


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Improvement in Dovetailing-Machines.

No. 131,932.

Patented Oct. 8, 1872.



ATTEST:

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IMPROVEMENT IN DOVETAILING-MACHINES.

Specification forming part of Letters Patent No. 131,932, dated October 8, 1872.

To all whom it may concern:

Be it known that I, MYRON T. BOULT, of Battle Creek, in the county of Calhoun and State of Michigan, have invented a new and useful Improvement in Dovetailing-Machines; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a perspective view of my device attached to the table of the machine, for which Letters Patent of the United States were issued to me July 4, 1871, and numbered 116,543; Fig. 2 is a side elevation of the sector-lever which feeds forward the work to the cutter, the spacer-latch, and its dog, showing the latch raised from the spacer-bar to allow the latter to be shifted along; Fig. 3 is an elevation of the same from the other side; Fig. 4 is an elevation of the clamp-box on the side next the operator; Fig. 5 is a plan of the same and of its lateral extension or arm, through which it is moved on the table; Fig. 6 is an enlarged detached view of a gage-stop in the lower corner of the clamp-box; Fig. 7 is a plan of a finger-bar; Fig. 8 is a cross-section of the clamp-box on line *x x*, Figs. 4 and 5; Fig. 9 is a perspective view of the ends of a dovetailed drawer-front and one side in the relative positions in which they stand in the clamp-box, but inverted; and Fig. 10 is a cross-section of the same when put together.

The nature of this invention relates to an attachment or device more especially designed to be applied to the machine patented July 4, 1871, and numbered 116,543, by means of which dovetailed sockets and tenons may be simultaneously cut in a drawer front and side by the rotating cutter of said machine, or a similar cutter in other machines of like character. The object of the invention is to provide an attachment for holding the work and advancing it to the cutter at regular intervals for successively cutting in its ends the dovetails and tenons.

The invention consists in a bed-plate attached to one side of the machine-table, with dovetail ways on its upper surface, on which a slide-rest is reciprocated by a sector-lever. A cross slide or arm is dovetailed in ways on top of the slide-rest, moving at a right angle

with the latter, by means of a rack and pinion, and carrying on its extremity a clamp-box in which the stock is secured and advanced to the cutter, and also moved laterally across the table in front of said cutter; also in the means or mechanism for moving and governing the movement of said stock-box or clamp-box, as more fully hereinafter set forth.

In the drawing, A represents the table, and B the upright cutter, mounted on the head of a rapidly-rotating spindle, said cutter projecting above the plane of the table through an opening therein, and operating as described in said Letters Patent. C is a bed plate or bar, lying on the left-side edge of the table, and secured thereto by clips or clamps at each end. D is a slide-rest, moving on a longitudinal dovetail way, *a*, on the top of the bed-plate, and should be provided with adjustable gibs, as shown, to take up the wear on the way. D' is a dovetail-way lying on and across the body of the rest to receive an arm, E, moving therein at right angles with the motion of the slide-rest D. At the right end of the arm E is bolted a clamping-box, F, planed true on the bottom and sliding on the table A. G is a curved standard rising from the bed-plate C overhanging the front end of the slide-rest, and on its end is pivoted a lever, H, on the lower end of which is formed a geared sector, *b*, meshing with a rack, *c*, on the edge of the rest, and by which the latter is reciprocated on the way *a*, between the stationary stop *d*, nearest the front of the table, and the adjustable stop *d'* at the back part of the way. I is a curved standard rising from the way-plate D', in which and in said standard is journaled a vertical shaft, J, provided with a hand-wheel at the top, and a pinion, *e*, at the lower end, which meshes with a rack, *f*, lying on the top of the arm E, so that in the rotation of the hand-wheel the arm and clamp-box are moved laterally on the table A, except when locked by a latch, K, pivoted on a stud on the slide-rest, which latch is forced by a leaf-spring, *g*, to engage with any notch in a spacer-bar, L, secured to the arm E. A dog, *h*, is pivoted to hang from one side of the standard G; and in front of it, or next the operator, a stop, *i*, projects from the standard, which prevents any further movement of the dog in that direction. On the up-

per edge of the latch is a cam or inclined plane, *j*, in front of which the dog drops when the slide rest and arm are drawn back toward the operator. When they are moved forward the dog drops in front of the cam *j*; and as they are again drawn back, the dog being held by the stop *i*, the long arm of the latch is depressed and its short end is raised up out of the notch in the spacer-bar, as seen in Fig. 2. In this position the arm and its attached clamp-box may be moved laterally by the hand-wheel in either direction. The clamp-box is cast with a bottom and two ends, connected at the further upper side by a slotted girt, *k*, and across the near top side by another girt, *l*, through which are tapped a pair of clamp-screws, *m*, carrying a clamp, *m'*. *n* is a clamp-screw, tapped horizontally through the girt *l*, carrying a clamp, *n'*, which confines the stuff against the back girt *k*. To the back edge of the bottom of the box is secured a detachable finger-bar, *F'*, Fig. 7, which supports the work while it allows the cutter to come between the fingers to dovetail the stuff. Several sizes should be provided to attach to the box for making dovetails of various distances apart from center to center, and corresponding spacers *L* should be provided to move the work correspondingly. *o* is an adjustable angular gage-stop, pendent from each back corner of the girt *k*, to which it is secured by a screw-bolt, *p*, passing up through the slot in said girt. In the pendent end of the stop a transverse gage-pin, *q*, is inserted, and is held by a set-screw. In the front part of the end pieces of the box are other transverse gage-pins, *q'*, also held by set-screws, as seen in Fig. 4. *y*, Fig. 5, represents a piece of lumber, which is the side piece of a drawer, to be dovetailed, and is inserted in a vertical position between the girt *k* and the clamp *n'*, its lower end resting on the finger-bar and its edge abutting against the gage *o*, in which position it is fastened by the clamp *n'*. *z* is a drawer-front, and is inserted in the box by sliding it in on the bottom thereof until arrested by the piece *y*; and its edge is guided by the gage-pins *q q'* when it is secured in place by the clamp *m'*. Now, if the clamp-box and the parts carrying it be advanced by the sector-lever toward the cutter the latter will cut its way into the ends of the two pieces of timber, making a dovetail in one and cutting a tenon on the other. The operator, having one hand on the lever and the other on the hand-wheel *J*, throws forward

the lever, drawing back the work from the cutter. When nearly withdrawn the latch is raised from its notch in the spacer-bar, and, without stopping the movement of the lever, he partially rotates the hand-wheel, which moves the clamp-box and works along laterally on the table. In the mean time the latch has been released by the dog, and as the next notch in the spacer comes under the latch the latter drops into it, when the work is again moved up to the cutter to form the succeeding dovetail, and so on until the series is complete.

The adjustable stop *d'* governs the depth of dovetail in the drawer-front. The gage-stop pin *q* gives the "dodge" or space left at the edge of the drawer-side before forming the first tenon, and the gage-stop *o* and gage-pin *q'* give the "relish" or spaces left at the end corners of the drawer-front before forming the first dovetail therein, after which they are formed at regular distances apart by the notches in the spacer.

The sizes of the dovetails and tenons may be varied by using cutters of various sizes; but their distance apart from center to center is varied by using other spacers and corresponding finger-bars.

In order to level and keep level the bottom of the box its free end is provided with an adjustable shoe, *s*, adjustably bolted to the edge and side of the box *F*, which shoe slides on the table while the box clears it.

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

1. The plate *C*, provided with one or more ways, *a*, the slide-rest *D D'* reciprocating thereon by the sector-lever *H*, and carrying the arm *E*, and box *F* having a traverse movement through the shaft *J*, and pinion *e* engaging with the rack *f* on said arm, whereby the clamp-box may be moved toward and away from the cutter *B* and traversed in front of it, substantially as shown and specified.

2. The construction and arrangement, with relation to the bed-plate *C*, slide-rest *D*, and arm *E*, of the standard *G*, sector-lever *H*, rack *c*, dog *h*, stop *i*, the latch *K* provided with the cam *j* and spring *g*, and a detachable or changeable spacer, *L*, substantially as and for the purposes set forth.

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Witnesses:

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H. S. SPRAGUE.