

M. BUCK.

Tenoning-Machines.

No. 136,211.

Patented Feb. 25, 1873.

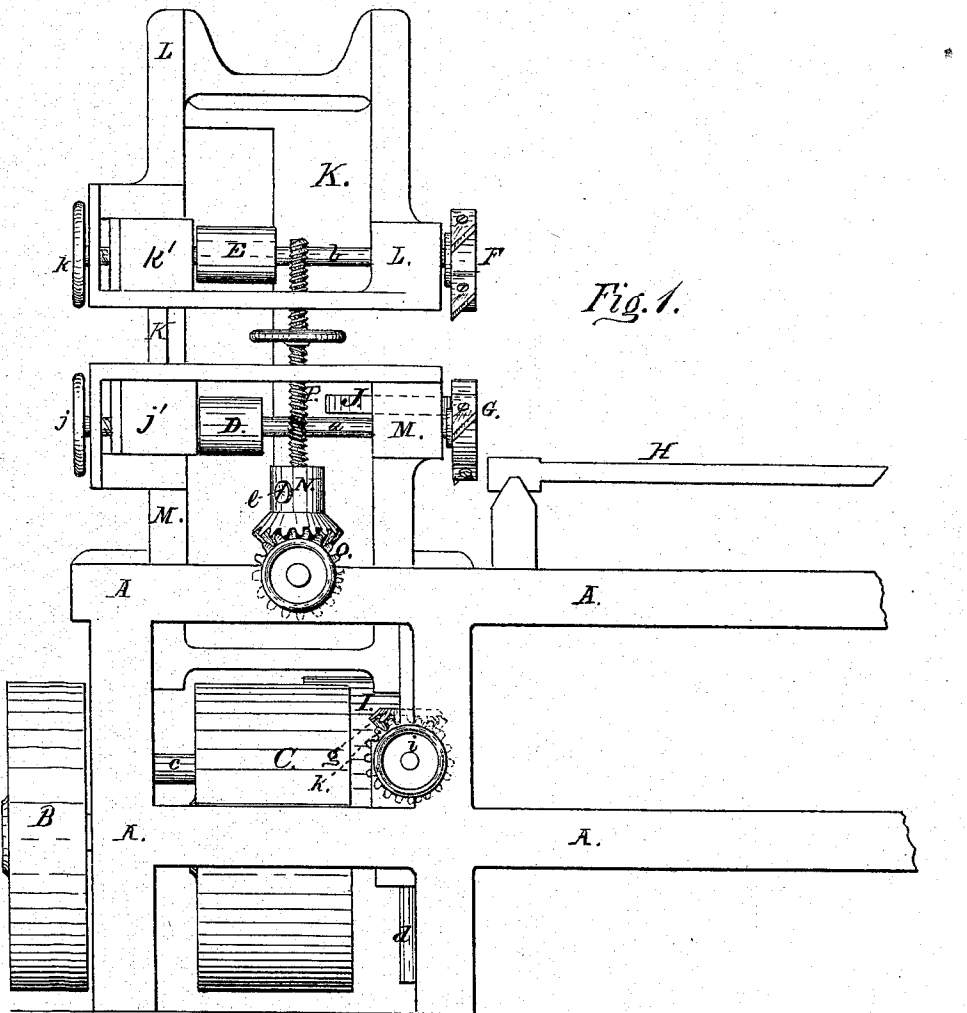


Fig. 1.

Witnesses.

E. H. Johnson.
J. P. Crawford.

Inventor.

Martin Buck
per C. D. Ormstrong.

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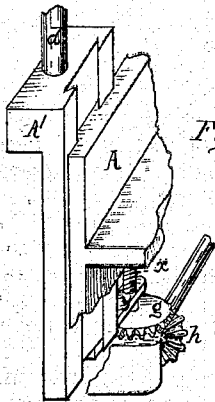


Fig. 5.

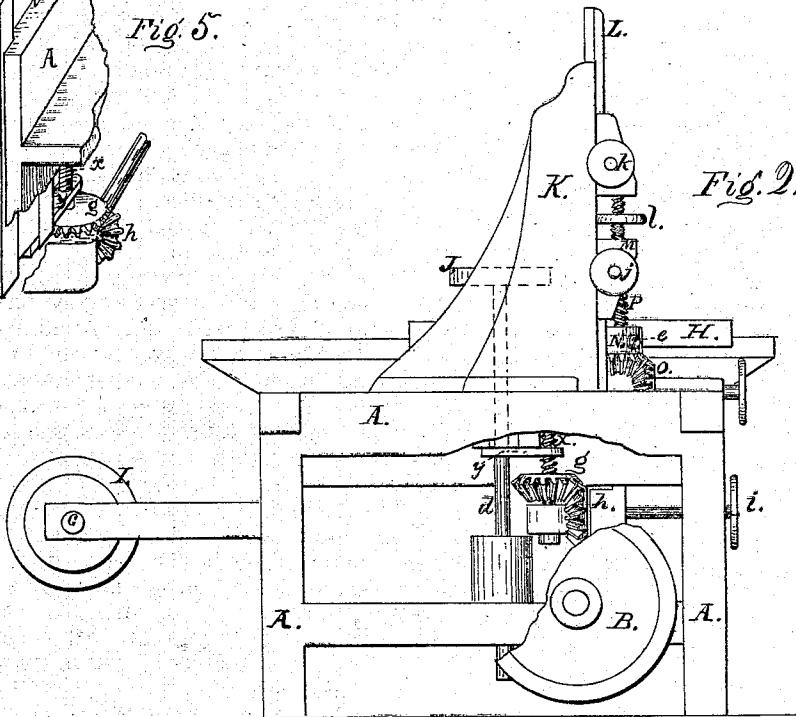


Fig. 2.

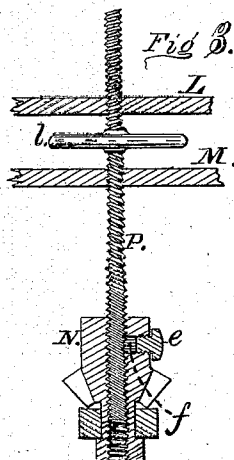


Fig. 3.

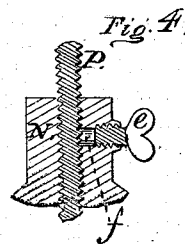


Fig. 4.

Witnesses

E. W. Johnson
J. P. Grandford

Inventor

Martin Buck
per C. A. Dingus

UNITED STATES PATENT OFFICE.

MARTIN BUCK, OF LEBANON, NEW HAMPSHIRE.

IMPROVEMENT IN TENONING-MACHINES.

Specification forming part of Letters Patent No. 136,211, dated February 25, 1873.

To all whom it may concern:

Be it known that I, MARTIN BUCK, of Lebanon, in the county of Grafton and State of New Hampshire, have invented certain Improvements in Tenoning-Machines, of which the following is a specification:

Nature and Objects of the Invention.

My invention relates to tenoning-machines used in wood-work; and consists in a novel construction, combination, and arrangement of parts, which have for their object to facilitate the change and adjustment of the machine for different tenons, &c., as will be more fully hereinafter set forth.

Description of the Drawing.

Figure 1 is a front elevation of the machine, clearly showing the mechanism for adjusting the horizontal cutters. Fig. 2 is a side elevation, showing the adjusting mechanism of the vertical cutter. Figs. 3 and 4 are parts in detail. Fig. 5 is a perspective view of the sliding box carrying the arbor of the vertical cutter.

General Description.

A represents the frame-work of the machine. H is the carriage upon which the material rests and is presented to the action of the cutters. B is the driving-pulley. C is the pulley for driving the horizontal cutters F G, and also for driving the vertical cutter J through the pulley I. L M is the frame-work supporting the cutter-heads. F G are the horizontal cutters secured to arbors *a b*, which have their journals in the frame-work. The arbor-frames of the horizontal cutters F G are coupled together by a right and left hand screw for adjustment to or from one another, the screw being operated by the bevel-gears N O. The bevel-gear N upon the screw P is arranged so as to give a rotary motion to the screw for adjusting the cutters parallel to each other, and also a vertically-reciprocating motion to raise and lower the cutter-frame, as desired. This is accomplished by a peculiar construction of the gear N. After this gear is tapped for the set-screw *e*, a plug, *f*, Figs. 3 and 4, of such diameter as to slide easily in the hole, is inserted and pushed forward by the set-screw *e* till its end projects slightly

into the hole for the screw P, and this plug is then tapped on its end, so that it will form a part of the gear-nut thread. When the set-screw *e* is not tight on the plug *f* there will not be sufficient friction on the screw P to turn it, and as the gear N is rotated by the gear O it will elevate or depress the screw, and therefore the frames L M, to which the screw is attached. By clamping this plug *f*, Figs. 3, 4, by means of the set-screw *e*, to the screw P, the plug will bite against the screw and compel it to revolve with the gear; and as this screw is right and left hand threaded, the right-hand screw working in one of the cutter-head frames, and the left-hand one in the other, as it is rotated the frames will either be removed from or drawn toward each other, according to the direction in which the screw is turned. The vertical cutter-head J (see Figs. 2 and 5) is adjusted by the pinions *g h*, the shafts of which have proper bearings, one of which slides in the frame-work of the machine, and one of these shafts, *x*, is screw-threaded and works in a nut, *y*, attached to the frame A' supporting the cutter J, and as the gears are rotated the cutter is moved up or down, as desired.

The pulley which operates the cutter J is feathered to the cutter-arbor so that the arbor will rise and fall through the pulley.

The cutters F G are adjusted horizontally by means of thumb-screws *k j*, which operate the journal-boxes *k' j'*, in which one end of the arbors *a b* rests.

From the foregoing description it will be seen that the machine can be quickly and perfectly adjusted for cutting single or double tenons of any dimension or shape.

Claims.

1. The combination and arrangement, with the cutters F G and frames L M, of a right and left hand screw, gears N and O, constructed and operating for adjustment of the cutters to or from each other, substantially in the manner described and specified.

2. The gear-wheel O and lock-nut N, combined with the screw P, set-screw *e*, and follower *f*, whereby rotary and reciprocating motion can be imparted to the screw, constructed and operating substantially in the manner described and specified.

3. In combination with mechanism described in second claim for adjusting the cutters F G vertically, the mechanism for adjusting the cutters laterally, consisting of the sliding boxes *j' k'*, and screws *j k*, constructed and operating substantially in the manner described and specified.

4. The combination, with the mortising-cut-

ter J, of the screw *x*, gear-wheels *g h*, and shaft *i* for adjusting the cutter J vertically, substantially as described and specified.

MARTIN BUCK.

Witnesses:

W. B. WEEKS,

JAMES G. TICKNOR.