No. 665,791. Patented Jan. 8, 1901.

I. LIGHTNER.

MORTISING AND TENONING MACHINE.

(Application filed Oct. 27, 1900.)

(No Model.)

Fig. 1.

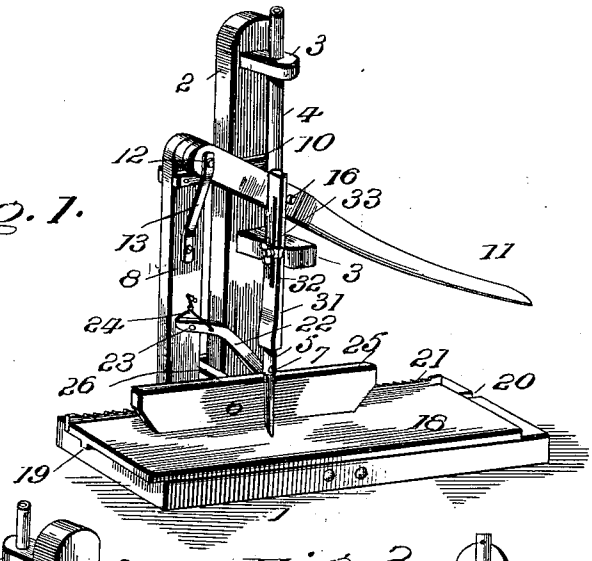


Fig. 2.

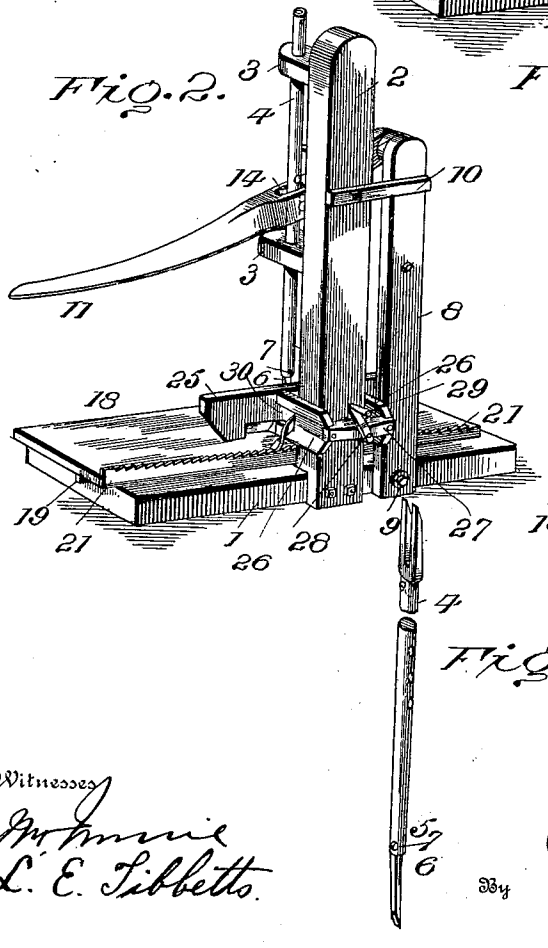
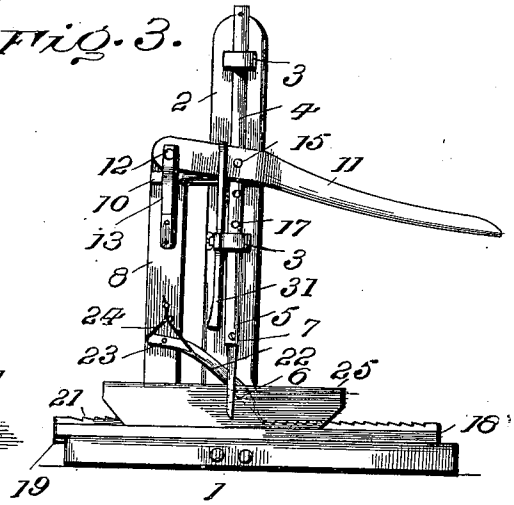


Fig. 3.



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UNITED STATES PATENT OFFICE.

ISAAC LIGHTNER, OF CALIENTE, CALIFORNIA.

MORTISING AND TENONING MACHINE.

SPECIFICATION forming part of Letters Patent No. 665,791, dated January 8, 1901.

Application filed October 27, 1900. Serial No. 34,628. (No model.)

To all whom it may concern:

Be it known that I, ISAAC LIGHTNER, a citizen of the United States, residing at Caliente, in the county of Kern and State of California, have invented a certain new and useful Mortising and Tenoning Machine, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to mortising and tenoning machines; and the object in view is to provide a portable hand-operated machine of the class referred to simple and efficient in construction and embodying means whereby the work-table is automatically moved forward step by step beneath the mortising and tenoning tool, the feeding devices for the table being actuated by the lever with which the machine is operated.

The detailed objects and advantages of the invention will appear in the course of the ensuing description.

The invention consists in a manually-operated mortising and tenoning machine embodying certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a mortising-machine constructed in accordance with the present invention. Fig. 2 is a perspective view of the machine looking from the opposite side. Fig. 3 is a front elevation of the machine.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

The mortising and tenoning machine contemplated in this invention comprises, essentially, a base 1, designed to be bolted or otherwise fixedly secured to and upon a bench, table, or other convenient support. Rigidly attached to the base, at one side thereof, is a fixed standard 2, provided with laterally-projecting lugs 3, provided with bearings for a vertically-disposed reciprocating plunger 4, the latter being provided at its lower end with a socket 5, adapted to receive a mortising or tenoning tool 6, which is held therein by means of a clamping-screw 7.

Arranged at one side of the standard 2 is an oscillatory fulcrum-post 8, pivotally connected at 9 to the base 1, as shown in Fig. 2, the upper end of said fulcrum-post being adapted to swing toward and away from the base and being held between parallel guides 10, secured to the standard 2. The operating-lever 11 is fulcrumed at one end on the post 8 by means of a pin or bolt 12, passing through the lever and fulcrum-post and having its outer end supported by a bracket 13 on the fulcrum-post. Intermediate its ends the lever 11 is provided with a slot 14 for the passage of the plunger 4 and is further provided with a transverse opening 15 for the reception of a connecting-pin 16, adapted to pass through one of a series of holes 17 in the plunger. The holes 17 are arranged at different points in the length of the plunger 4 for the purpose of enabling the plunger and the bit carried thereby to be raised or lowered for regulating the depth of cut and way around, so that the cutting edge of the bit may be presented toward either end of the machine. In order to reverse the position of the bit, the connecting-pin 16 is removed, the plunger partially turned, and the connecting-pin reinserted.

The work-table 18 is adapted to move longitudinally upon the base 1, and in order to guide said table in its movement the table is provided along its lower side with a longitudinal rib 19, which operates in a groove 20 in the upper surface of the base 1. Extending along the inner edge of the work-table 18 is a rack-bar 21, which is adapted to be engaged by the free end of a feed-dog 22, pivotally mounted at 23 on the fulcrum-post 8 and held in engagement with the rack-bar 21 by means of a spring 24 on the fulcrum-post. In operating the lever 11 a swinging movement is imparted to the oscillatory fulcrum-post 8, and the feed-dog 22 is thereby advanced a distance equal to the length of one tooth of the rack-bar 21, thus carrying the work-table forward and advancing the work beneath the bit and presenting a new surface to be acted upon by the bit.

21 designates a transversely-movable gage, against which the work bears. This gage is provided on one side with parallel guides 26, embracing the standard 2 on opposite sides and connected by a cross-bar 27, having

swiveled therein a short shaft 28, the inner end of which is threaded into the standard 2 and the outer end of which is provided with a hand-crank 29, whereby it may be turned for moving the gage 25 transversely across the work-table. One of the guides 26 is provided with a slot 30 for the passage of the feed-dog 22, said slot being of sufficient length to permit the necessary adjustment of the gage 25.

31 indicates a gaging-clamp provided with a longitudinal slot 32 and held against the lower lug 3 on the standard 2 by means of a thumb screw or nut 33, passing through the slot 32 into said lug. The clamp 31 may be moved up or down any desired distance and serves to hold the work downward upon the table and prevent it from rising as the mortising or tenoning bit is withdrawn.

The machine hereinabove described is simple in construction, may be readily carried from place to place, and is admirably adapted to perform the work for which it is designed. The table is moved automatically forward through the medium of the connections between it and the operating-lever, thus insuring the proper amount of movement of the work prior to the succeeding stroke of the plunger and bit carried thereby.

I do not desire to be limited to the exact details of construction herein described, but reserve the right to change, modify, or vary the construction within the scope of this invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a manually-operated mortising and tenoning machine, in combination, a base, a fixed standard thereon, a reciprocating plunger mounted in bearings on said standard, an oscillatory fulcrum-post at one side of the standard, an operating-lever mounted on said fulcrum-post, a pin detachably connecting said lever and plunger, a slidable work-table, and a feeding device for said table connected with and actuated by the fulcrum-post, substantially as described.

2. In a manually-operated mortising and tenoning machine, in combination, a base, a fixed standard rising therefrom, a work-table adapted to slide lengthwise of the base, a rack-bar attached to the table, an oscillatory fulcrum-post connected pivotally to the base and arranged at one side of the fixed standard, parallel fulcrum-post guides attached to the standard, a reciprocating plunger mounted in bearings on the standard, an operating-lever connected at one end to the fulcrum-post and detachably connected with the plunger, and a feeding-dog pivotally connected to the fulcrum-post and having its free end in engagement with the rack-bar on the work-table, substantially as described.

3. In a manually-operated mortising and tenoning machine, in combination, a base, a fixed standard rising therefrom, a reciprocating plunger mounted on the standard and adapted to carry a mortising or tenoning bit, a lever for operating the plunger, a work-gage provided with parallel guides embracing the fixed standard, a cross-bar connecting the extremities of said guides, and a gage-operating screw engaging said cross-bar and standard for setting the gage, substantially as described.

4. In a manually-operated mortising and tenoning machine, in combination, a base, a fixed standard thereon, a reciprocating plunger mounted in bearings on said standard, an oscillatory fulcrum-post at one side of the standard, an operating-lever mounted on said fulcrum-post and connected with the plunger, a slidable work-table, and a feeding device for said table connected with and actuated by the fulcrum-post, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ISAAC LIGHTNER.

Witnesses:
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