

W. L. EPPERSON.

Mortising Machine.

No. 84,620.

Patented Dec. 1, 1868.

Fig. 2.

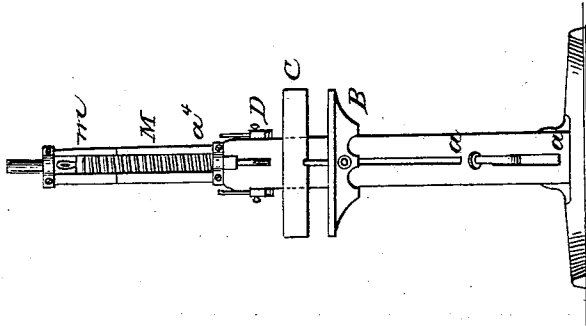
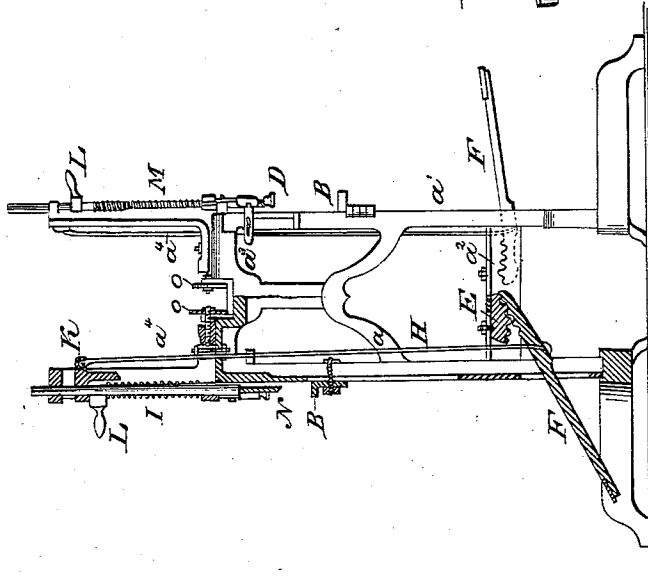


Fig. 3.



Fig. 1.



Witnesses:

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# UNITED STATES PATENT OFFICE.

W. L. EPPERSON, OF LOUISVILLE, KENTUCKY.

## IMPROVEMENT IN MORTISING-MACHINES.

Specification forming part of Letters Patent No. **84,620**, dated December 1, 1868.

*To all whom it may concern:*

Be it known that I, W. L. EPPERSON, of Louisville, county of Jefferson, State of Kentucky, have invented a new and Improved Mortising-Machine; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical sectional elevation. Fig. 2 is an end view. Fig. 3 is a perspective view of serrated segment.

Similar letters of reference indicate corresponding parts.

My invention relates to that class of mortising-machines which are operated by a treadle; and it consists in the means by which an increased leverage is had when it is principally needed—that is, when the leg of the operator is most bent—and in securing the greatest rate of speed when it is most required—that is, when the leg is being extended; in the peculiar devices by which the chisel is adjusted; and in an improved construction and arrangement of its various parts, as will be hereinafter more fully described.

In the drawings, A is the frame, which may be cast of metal or any suitable material. A<sup>1</sup> are the uprights, slotted vertically at *a*. B is a table, on which the timber to be mortised rests. It is secured to the upright by a bolt, which enters the slot in the upright from within, passes through the vertical portion of the table, and is tightened by a screw-nut on its point. The vertical portion of the table extends far enough beyond either side of the upright to allow slides to be fitted on its rear surface, so as to steady the table as it moves up or down the face of the upright. C is a guide-piece, which is cast with the frame. D are pins, which aid in securing the timber in position. They pass up through circular heads on arms which are slotted longitudinally, and fit into transverse grooves on the sides of the uprights. They slide out or in when the screws in their slots are loosened. The pins are tightened by screws. A<sup>2</sup> is the lower cross-arm. It is a rectangular box, with its bottom removed, slotted on its upper surface to near its center. E is a serrated segment, having

a deep vertical slot cut in its outer end. It is hung to a bolt which passes upward through the slot on the cross-piece A<sup>1</sup>, which has a screw-nut on its point, to secure it in position, and which slides in the above slot at pleasure.

F is the treadle, which passes through the lower slot in the upright A<sup>1</sup>, and is itself slotted vertically for a short distance before it enters the upright and after it leaves it. Its upper surface is provided with cogs for a short distance from its inner end. It is carried by connecting-rod H, which is situated on the inside of the frame. H is the connecting-rod, which passes through the slot in the treadle. Its lower end is in the form of a T, which enables it to carry the treadle. This T fits into a groove on the lower edge of the treadle. It is pivoted to a small arm at the top of the frame, which is attached to the shaft of the chisel. A<sup>3</sup> is the beam of the frame. It has a deep, broad recess across its face, at its center, in which a disk is accommodated. This recess is separated from broad longitudinal grooves by a partition, which grooves extend to the extremities of the beam. A<sup>4</sup> is the chisel-frame, constructed in the form of an L, the horizontal portion of which slides in the grooves above described. I is the shaft of the chisel, which is secured on the face of the upright portion of frame A<sup>4</sup> in a circular groove by cap-pieces screwed into said frame at its top and bottom. K is a small arm, secured to the chisel-shaft, and which is carried up or down by the connecting-rod and spring in the vertical slot of frame A<sup>4</sup>. L is a hand-lever for turning the chisel-shaft to the right or left. M is a coil-spring, secured to the shaft at *m* and to the lower cap of the chisel-shaft. N is the chisel, which may be of any approved construction. O is a disk, which forms the head of a screw. This screw passes through the partition above described, and into the end of the horizontal portion of the frame A<sup>4</sup>. P is a screw-nut, which carries a pin having a square head. This head may be of any other form; but it best serves its purpose by being square, with its sides parallel to the sides of the beam. This pin prevents the point of the screw from coming in contact with the connecting-rod.

The operation of my invention is as follows:

The timber to be mortised is placed on the table, which may be raised to the desired height by loosening the screw-nut on its bolt. It may be made secure by tightening the same. Lower the pins until their heads rest on the timber, and secure them there by tightening their screws. The guide-piece now aids in securing the timber in a proper position. Turn the disk until the chisel is at the required place, when you are ready for work. Place the right or left foot on the outer end of the treadle. It will be found that the addition of the segment to the short arm of the treadle gives a powerful leverage when you can exert but little force with the foot—that is, at the starting—and that the fulcrum, being adjustable, is moved farther off as you descend, thus increasing the speed of the chisel as the purchase or leverage is lessened. The hand-lever will enable you to turn the chisel at pleasure.

To increase the leverage, move the segment close to the upright A<sup>1</sup>. To increase the speed, move it toward the center of the cross-arm. This is easily done by means of the bolt, as it slides in the slot on the face of the cross-piece. Be careful to keep the end of the connecting-rod in the groove at the bottom of the treadle.

It will be observed that, while I have described but one machine, two are shown in the drawings. It is designed to unite them, so that two persons may work at the same frame at once, or two chisels of different sizes may be at command.

Having thus described the nature of my invention and its operation, what I claim as new, and desire to secure by Letters Patent, is—

1. A treadle or lever for operating a mortising-machine, the short arm of which is lengthened automatically as the lever is moved to operate the machine.

2. The combination of the cogged lever F and the segment E and connecting-rod H, substantially as shown and described.

3. The arrangement of the adjustable tool-carrier A<sup>4</sup>, screw O, and connecting-rod H, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

W. L. EPPERSON.

Witnesses:

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A. S. HUGHES.