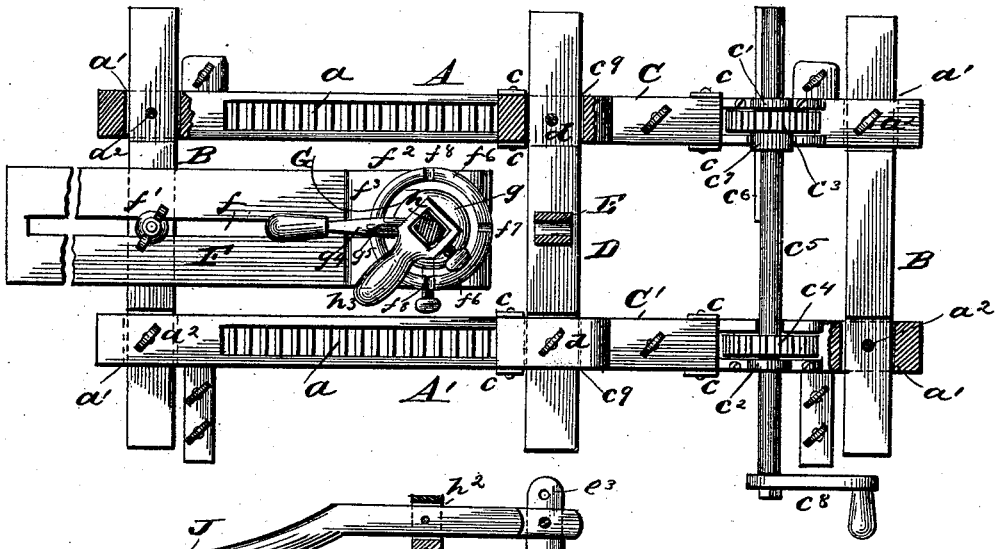
(No Model.)

I. W. JOHNSON.

MORTISING MACHINE.

No. 345,637. Patented July 13, 1886.

Fig. 1.



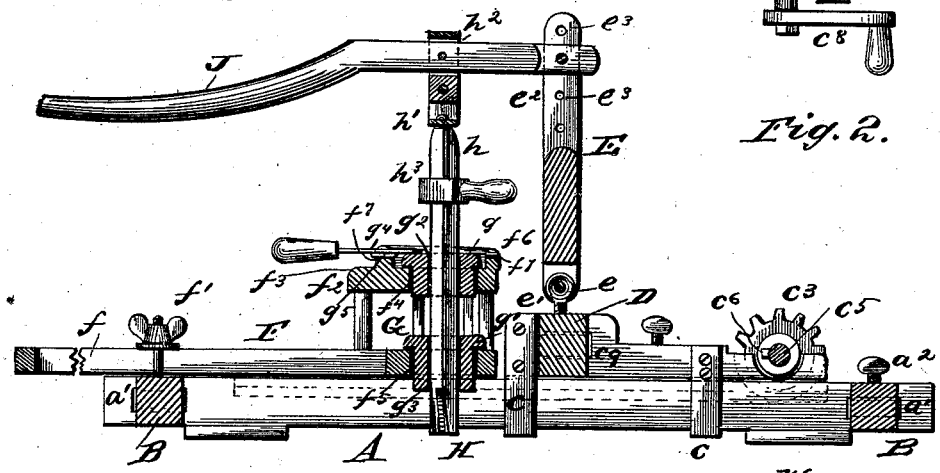


Fig. 2.

Fig. 3.

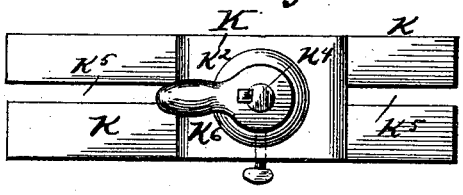
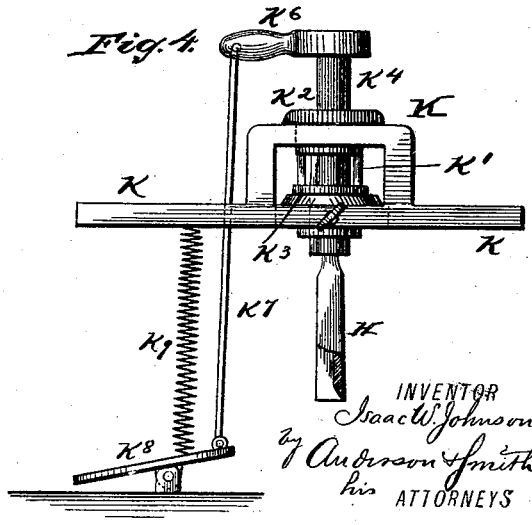


Fig. 4.



WITNESSES

Phillemasi.

E. H. Bates

INVENTOR

Isaac W. Johnson.

by Anderson & Smith

his ATTORNEYS

UNITED STATES PATENT OFFICE.

ISAAC W. JOHNSON, OF NEW RICHMOND, WISCONSIN.

MORTISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 345,637, dated July 13, 1886.

Application filed Ju'y 9, 1884. Renewed December 26, 1885. Serial No. 186,710. (No model.)

To all whom it may concern:

Be it known that I, ISAAC W. JOHNSON, a citizen of the United States, residing at New Richmond, in the county of St. Croix and State of Wisconsin, have invented certain new and useful Improvements in Mortising-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a plan view of my device. Fig. 2 is a vertical sectional view of the same, and Fig. 3 is a detail view. Fig. 4 is a view of a modification of my invention.

This invention embodies certain improvements on the patent granted to me October 2, 1883, and numbered 286,016, some of which improvements relate to the improved construction of parts similar to and performing the same function as relative parts of the machine protected by said patent, and some to additional parts which are novel, and are hereinafter more fully described.

In the accompanying drawings, A A′ are the bed-rails of the frame of the machine, provided on their upper surfaces with the racks *a a*, for a purpose hereinafter mentioned, and having at right angles to their outer surfaces properly-shaped extensions provided with vertical set-screws to fix the frame to any desired support. The said bed-rails are laterally mortised at *a′ a′*, equally distant from each end, to receive and be laterally adjustable on the cross-beams B B by means of the vertical set-screws a^2 a^2.

C C′ are similar bars, which lie longitudinally on the bed-rails, and are connected with the same, so as to slide thereon, by the squared straps *c c*, each bar having one stop near its front end and one near its center, as shown.

c' c^2 are similar and opposite bearings or boxes on the rear ends of the bars C and C′, respectively, and c^3 and c^4 are similar pinions, attached to a rod, c^5, within the bed-rails. The said rod turns directly in the bearing c', and has the pinion c^4 firmly fixed to it; but the pinion c^3 is attached to the rod by a longitudinal feather, c^6, upon the latter, and is provided on its outer surface with a journal, c^7, which turns in the bearing c'.

c^8 is a proper handle fixed to one end of the rod c^5, to rotate the same and its attached pinions. The pinion c^4 is thus laterally adjustable on the rod, and can always mesh with the rack *a* on the bed-rail A, in whatever position the bed-rails are adjusted on the cross-beams B B.

c^9 c^9 are longitudinal rectangular slots in the enlarged front ends of the bars C and C′, which receive and are laterally adjustable on the reduced ends of the cross-beam D by means of proper vertical set-screws, *d d*, as shown.

E is a link, which pivots by its bifurcated lower end at *e* in the eye of an upright screw, e', fixed into the upper surface of the center of the beam D. The upper end, e^2, of the said link is also bifurcated longitudinally, and provided with the longitudinal adjusting-holes e^3 e^3, for a purpose hereinafter explained.

F is a plate provided with the central longitudinal slot, *f*, by means of which and the proper set-screw, f', passing through said slot into the upper surface of the center of the front cross-beam B, it is made longitudinally adjustable on the latter.

f^2 is a rectangular frame, situated at the rear end of the plate F, and composed of a horizontal top plate, f^3, and four uprights, which connect the corners of the latter with the plate F.

f^4 is a large central circular opening into the plate f^3, situated vertically above a similar opening, f^5, in the plate F, and f^6 is a vertical circular flange made on the top of the plate f^3, concentrically around the opening f^4, and provided with the detent-notches f^7 f^7 and f^8 f^8, the former in the central longitudinal line of the machine and the latter at right angles thereto.

G is a frame composed of the horizontal disks *g* and *g′*, which respectively fit into the openings f^4 and f^5, and four similar equidistant rods connecting the edges of the opposite surfaces of the same. The frame G may be secured at any desired height in the frame f^2 by proper set-screws, which pass through the

side of the latter and unhinge on the edges of the disks g and g'.

g^2 and g^3 are properly-formed central openings in the disks g and g', respectively, which openings are provided with suitable recesses for the accommodation of the feather on the vertical rod h that carries the chisel, and is longitudinally adjustable in the said openings. If the rod h is made rectangular, the feather and recesses may be dispensed with.

g^4 is a horizontal leaf-spring, having on its outer end a proper handle, its inner end being fixed to the upper surface of the disk g, and g^5 is a detent-point depending from the under surface of the same, which will engage with any one of the notches f^7 and f^8, so that the chisel H at the lower end of the rod h may be fixed with its cutting-edge facing to front or rear, or laterally to either side. The upper end of the rod h swivels on the lower central part of a squared strap, h', the upward extending ends of which pivot transversely in a block secured between the depending ends of a strap, h^2, which fits over and is longitudinally adjustable on a lever-handle, J, by means of a proper set-screw and holes in said lever.

h^3 is a gage-bar, which fits by a proper slot over the rod h above the disk g, and is made vertically adjustable thereon by a proper set-screw. The function of the gage-bar is to set the bar h and attached chisel so that the latter will cut to any desired depth, the gage-bar coming in contact with the upper surface of the disk g, and preventing the chisel from descending lower than is wished. The lever-handle J pivots at its rear end with two of the opposite holes, c^3 c^3, of the bifurcated upper end of the link E, (being pivoted lower down when more power is required.)

K is a frame, in all respects similar to the frame f^2, situated centrally on the plate k, and k' is a frame similar to the frame G, engaging in the frame K by the disks k^2 and k^3, connected together similarly to g and g'. The chisel-rod k^4 in this case is preferably made round, and engages said disk by a feather, as described, the upper end being furnished with a horizontal handle, and having no connection with the lever-handle J. The plate k is provided with longitudinal slots k^5 k^5 at each end, by means of which and proper set-screws it is rendered transversely adjustable across the bars C C', into the upper surfaces of which the set-screws enter. The horizontal handle k^6 is secured to the top of the chisel-rod k^4, so as to have the chisel always facing the operator, and k^7 is a rod by which the said handle is pivoted to a treadle, k^8. By pressing upon the treadle in the usual manner the chisel-rod and chisel are depressed.

k^9 is a proper spring connecting the treadle with the under surface of the plate k, which spring raises or returns the chisel-rod and chisel after they have been depressed.

The operation of the machine is similar to that in my patent numbered 286,016, its different functions of the parts and the way one part is adjustable on another being readily understood from the foregoing description.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a mortising-machine, the combination, with the laterally-adjustable cross-rails A A', provided with racks a a, cross-beams B B, and longitudinally-adjustable plate F, provided with proper means to carry and direct the chisel-rod h and attached chisel, of the bars C and C', rod c^5, pinions c^3 and c^4, cross-beam D, link E, and lever J, properly swiveled to the upper end of the chisel-rod h, substantially as specified.

2. In a mortising-machine, the combination, with the cross-beam D, properly secured to the frame of the machine, link E, lever J, and chisel-rod h, having upon it the gage-bar h^3, of the plate F, frame f^2, and frame G, provided with the disks g and g', having, respectively, the central openings, g^2 and g^3, substantially as specified.

3. In a mortising-machine, the combination, with the chisel-rod h and frame f^2, having on its upper plate, f^3, the flange f^6, which concentrically surrounds the opening in said upper plate, and is provided with the detent-notches f^7 and f^8, of the frame G, carrying the chisel-rod h, and provided on its top with the horizontal spring g^4, having the detent-point g^5 on its under surface, substantially as specified.

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

ISAAC W. JOHNSON.

Witnesses:
J. E. SAWYER,
B. N. WEBSTER.