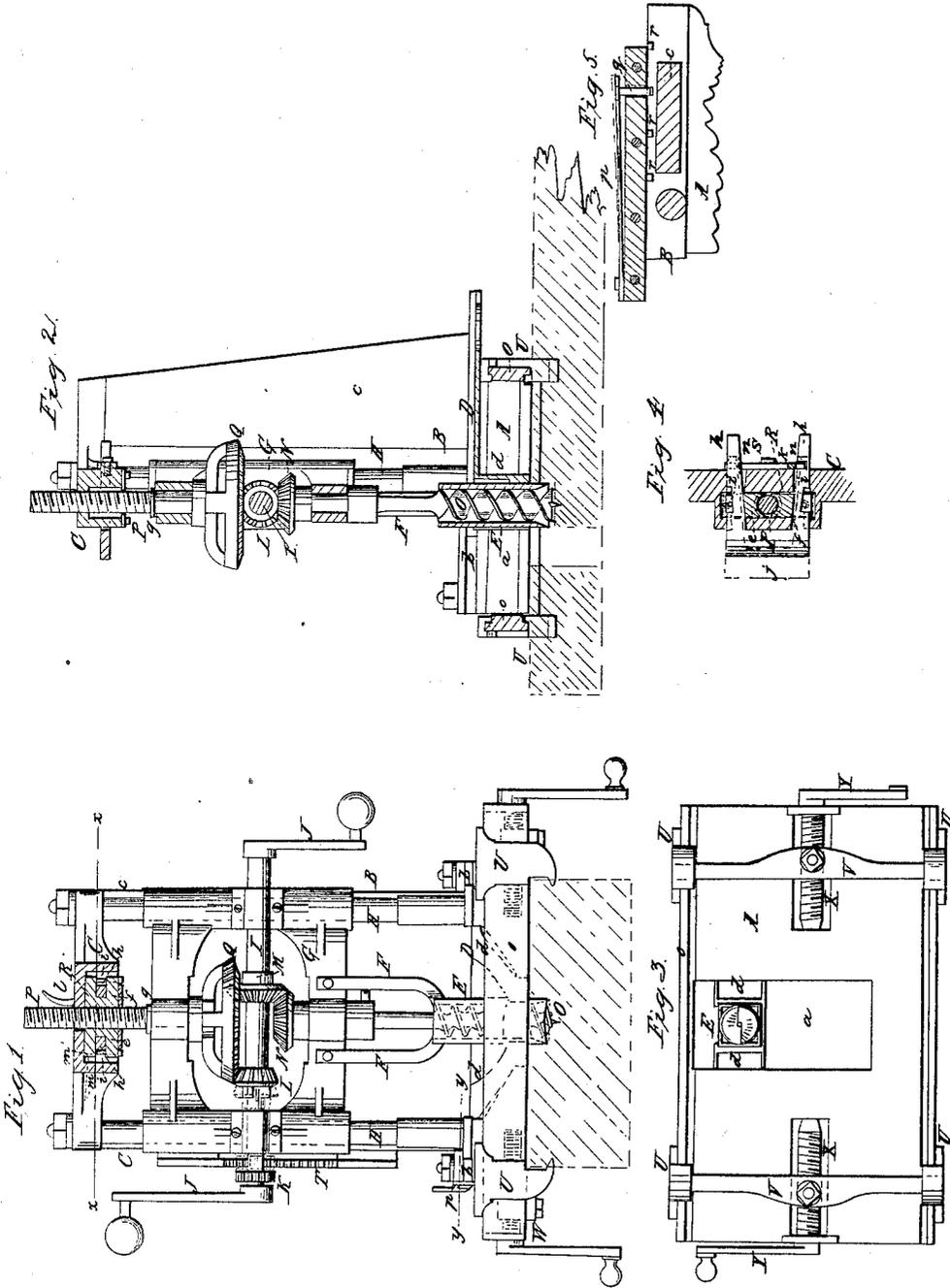


L. Kittinger,
Mortising Machine.

N^o 18,977.

Patented Dec. 29, 1857.



UNITED STATES PATENT OFFICE.

LEVI KITTINGER, OF EAST GREENVILLE, OHIO.

DEVICE FOR THROWING INTO AND OUT OF GEAR THE TOOL OF MORTISING-MACHINES.

Specification of Letters Patent No. 18,977, dated December 29, 1857.

To all whom it may concern:

Be it known that I, LEVI KITTINGER, of East Greenville, in the county of Stark and State of Ohio, have invented a new and Improved Boring and Mortising Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a front view of my improvement. Fig. 2, is a vertical central section of ditto. Fig. 3, is an inverted plan of ditto. Fig. 4, is a horizontal section of the nut of the screw which operates the gate, taken in the line (x) (x) Fig. 1. Fig. 5 is a horizontal section of one side of the machine taken in the line (y) (y) Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to improvements in that class of mortising machines designed for large work and mortising hardwood, and in which an auger is employed within a hollow quadrilateral chisel.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A represents the base of the machine which is a rectangular block having a rectangular slot (a) made through it as shown in Fig. 3. To the base A, there are secured transversely two ways or guides (b) (b) between which the lower end of a frame B is fitted and allowed to slide. The frame B is formed of two uprights side pieces (c), (c). Connected at their upper ends by a cross-tie C. The lower ends of the side pieces (c) (c) are connected by a plate D, the front end of which has two inclined projections (d) (d) which brace or serve as guides to the lower end of a hollow chisel E, said chisel being of quadrilateral form and having its basils which form the cutting edges on its inner sides, see Fig. 2. The upper end of the chisel E is attached by bars F, F, to the lower part of a gate G, which is fitted and works on two vertical rods H, H, attached to the frame B. In the gate G a horizontal shaft I is placed, provided at each end with a crank J, and two pinions K, L, are placed on this shaft, said pinions being allowed to slide on it, but made to turn with it by feathers and grooves. On the shaft I a bevel wheel M is permanently attached and this wheel gears

into a corresponding wheel N, on the upper end of an auger O, which is fitted within the chisel E, the upper end of the auger being fitted in a proper bearing within the lower part of the gate.

In the upper part of the gate G a screw rod P is fitted and a bevel toothed wheel Q is attached to its lower end. The screw rod P passes through the cross-tie or plate C, within which the nut R, is placed. The nut R is formed of two parts (e) (f), the parts being placed at opposite sides of the screw and allowed to slide to a certain extent so as to grasp or fit into the screw or be removed free from it, the screw rod being properly retained in the gate G by a shoulder (g). The two parts (e) (f) of the nut are operated by two oblique bars (h) (h) which pass horizontally through recesses in the outer ends of the parts (e) (f) and are secured thereon by vertical pins (i) (i). The outer ends of the bars (h) (h) and (j) may be formed or cut from a solid plate. To the back side of the cross-tie or plate C a catch S, is attached. This catch is a simple bar (k) pivoted at its center to the cross-tie C, and provided with a thumb piece (l), a spring (m) bearing against the bar (k) which spring has a tendency to keep the ends of the bar in notches (n) in the bars (h) (h) when said bars are shoved inward so as to press the two parts (e) (f) of the nut into the screw rod P, see Figs. 1 and 4.

To one of the upright side pieces (c) a vertical rack T is attached, and the pinion K is made to gear into it occasionally as hereinafter shown.

The front and back edges of the base A are precisely parallel and ways or guides (o) (o) are attached thereto. On each guide (o) two jaws U, U, are placed, and these jaws are connected to bars V, which are placed transversely below the base A. Each bar V is provided at its center with a nut W through which a screw X passes. These screws are fitted in recesses in the under side of the base and each screw is provided with a crank Y on its outer end.

To one of the ways or guides (b) a spring (p) is attached, said spring being a flat bar or plate secured at one end to the way or guide and having a pin (q) attached to its opposite end which pin passes through the way or guide and fits in either of a series of holes (r) made in one side of the lower end of the frame B.

The machine or implement is used as follows: The base A is placed upon the piece of timber Z, to be mortised and the jaws U, by turning the cranks Y, are made to grasp the timber firmly the chisel E being placed in line with the scribes made for the intended mortise. The pinion K is shoved out of gear with the rack T, and the pinion L is shoved in gear with the wheel Q. The bars (h), (h), are shoved onward by the thumb so as to cause the two parts (e) (f) of the nut R to clasp the screw rod P. The shaft I is then turned and the auger O, is rotated by means of the wheels M, N, and the chisel E is forced downward by means of the screw rod P, rotated by the gearing Q, L. The auger O, of course bores a round hole and the chisel E squares it, the auger being slightly in advance of the chisel. When the chisel and auger has entered the timber a sufficient depth the thumb piece (l) is thrown back and the bar (h) thrown out free from the bars (h), (h), and the bars (h) shoved outward so as to move the parts (e), (f), of the nut free from the screw rod P. The pinion L is then shoved out of gear with the wheel Q and the pinion K is shoved in gear with the rack T, and by turning the shaft I in the same direction as before, the gate G will be raised and consequently the auger and chisel. The operator then draws the pin (q) on spring (p) out from the hole (r) in the lower part of frame

B and shoves back the frame B until the pin (q) enters the next hole (r). The spaces between the holes (r) are equal to the width of the chisel E. The bars (h) (h) are now shoved inward the parts (e) (f), made to grasp the screw rod, the pinion K shoved out of gear with the rack T, and the pinion L shoved in gear with the wheel Q. The shaft I, then again turned and the chisel and auger operated as before till they have reached the desired depth when they are again raised and adjusted horizontally for a succeeding cut, the above operation being continued until the mortise is cut of the desired length.

I am aware that a hollow chisel containing an auger has been previously used, and also connected to a sliding gate and, I am also aware that said parts have been placed in adjustable frames, I therefore do not claim the above parts, but

What I do claim as new and desire to secure by Letters Patent is—

Operating or adjusting the two parts (e) (f) of the nut R by means of the oblique bars (h), (h), connected with the parts (e), (f), as shown and used in connection with the catch S, for the purpose specified.

LEVI KITTINGER.

Witnesses:

JOSEPH HEEKMAN,
P. A. HUNENBYE.