C. L. Zeidler,

Mortising Machine.

No. 70,771. Patented Nov. 12, 1867.

Fig. 1

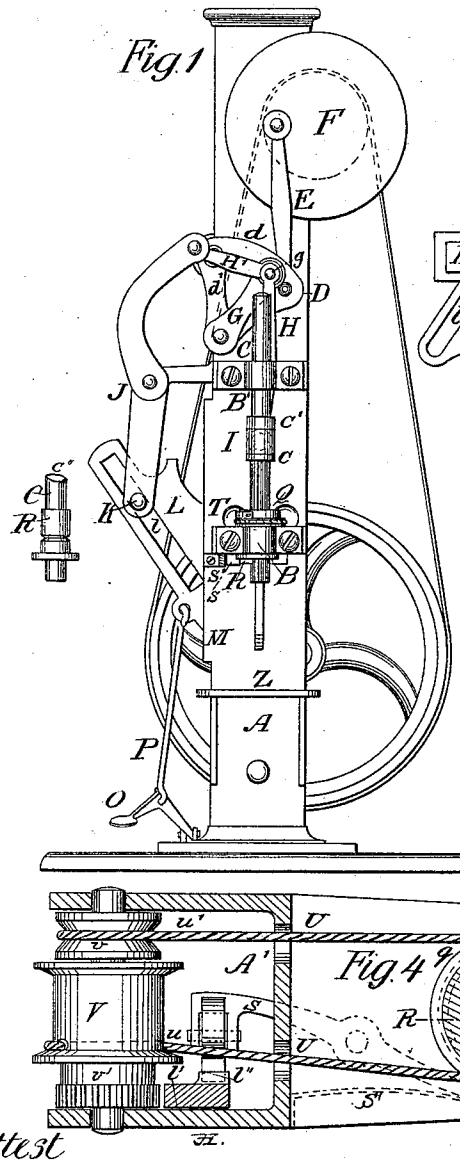


Fig. 2

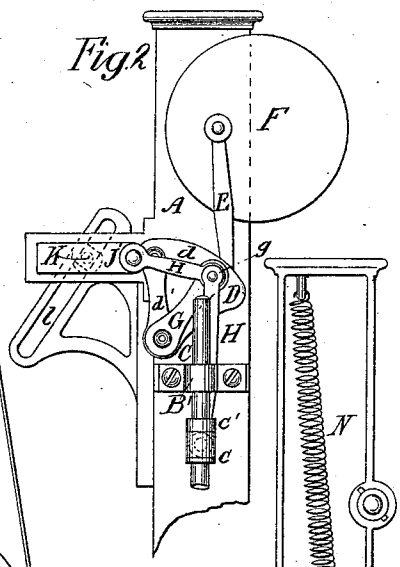


Fig. 3

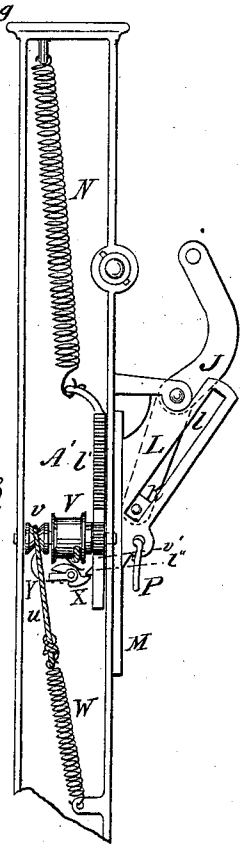
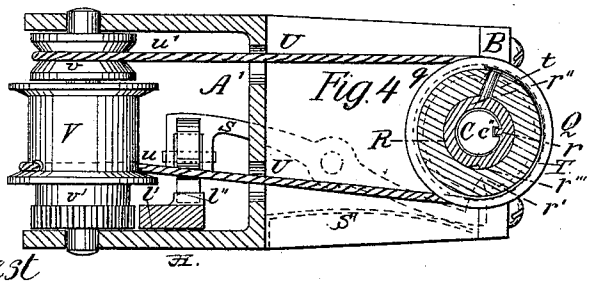


Fig. 4



Attest

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CHARLES L. ZEIDLER, OF CINCINNATI, OHIO.

Letters Patent No. 70,771, *dated November* 12, 1867.

IMPROVEMENT IN MORTISING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO WHOM IT MAY CONCERN:

Be it known that I, CHARLES L. ZEIDLER, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Mortising Machines; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

This is an improvement in the class of wood-mortising machines, actuated by steam or other power, whose chisel-stroke is placed under momentary control of the operator, so as to be increased or diminished, or reduced to a state of rest at will, without disconnection from the motor; and my devices are designed, first, to cause the variation of chisel action to respond to the slightest movement of the regulating treadle with less jar to the operator than heretofore; second, to insure, when desired, an automatic reverse of the chisel from right to left and left to right.

Figure 1 is a front elevation of a machine embodying my invention.

Figure 2 is a front elevation of the upper part, showing a modification of my invention.

Figure 3 is a rear view of the post.

Figure 4 is an enlarged horizontal section taken at the line X X.

A is a post, preferably of cast iron, and with transverse section, such as seen in fig. 4, so as to have a recess, A′, on its rear side for a portion of the reversing and retracting mechanism, as hereafter explained. B is the lower and B′ the upper of two guides for the chisel-bar or stem C. Journalled horizontally to the post A is a bell-crank, D, one of whose limbs *d* is connected by pitman E to driving-crank or disk F. Hinged to the other limb *d′* of the said bell-crank is an arm, G, whose free extremity is on one side connected by pitman H to a sleeve or box, I, which encircles the stem C between two collars *c* and *c′* upon the same, and on the other side is connected by pitman H′ with a rock-arm, J, whose lower extremity has a wrist, K, that occupies an oblique slot, *l*, in a slide, L, which is restricted to a vertical reciprocation by guides M upon the post. The slide L is upheld at its normal or resting position by a strong spiral spring, N, within the recess A′, and is capable of being depressed for action by means of a treadle, O, connected to the slide by a rod, P. Q is a thimble, journalled within the lower guide B, and encircling a sleeve, R, whose tongue *r* occupies a groove, *c″*, in the stem C, so that the stem, while capable of sliding up or down within the said sleeve, is compelled to rotate with it. S is a catch having a spring, S′, which forces it to engage in a notch, *r′*, in the sleeve, and thus holds said sleeve and its contained stem against reversal until liberated. Attached to the thimble Q is a bent spring, T, having a pin, *t*, which, traversing one side of the thimble, engages alternately in one or other of two notches *r″ r‴* on opposite sides of the sleeve R′. The thimble Q has a circumferential score, *q*, within which is fastened a thong or cord, U, one end, *u*, of which is carried backward and fastened underneath a sheave or pulley, V, while the other end, being also carried backward and over a score, *u*, on said sheave, terminates in a spiral spring, W, whose lower end is secured to the foot of the post. The sheave V carries a pinion, V′, which engages in a rack, *l′*, on the slide L. N is a strong spiral spring, which being fastened by its lower end to the slide L, and by its upper end to the top of the post A, serves to counterpoise the weight of the said slide and its accessories, and, on their release by the operator, to restore them to their normal position. The rear end of the catch within the foot carries a trigger, X, which yields readily to the descent of a spur or tappet, *l″*, upon the slide L, but which on the ascent of said slide becomes forced laterally backward by the said spur, and acts to disengage the catch S from the sleeve R, and to allow the spring *w*, acting through the now highly stretched cord, to effect a rapid semi-rotation of the sleeve and stem, and the engagement of the catch S and pin *t* in the opposite notches. The trigger X is restored to its normal position by a spring, Y. A customary adjustable table, Z, is provided for the stuff. In fig. 2 is seen a modification, in which the angle of the slot *l* is reversed, and the pitman H is hinged to a sliding-block, J′.

Operation.

The disk F being set in motion, the stuff to be mortised is laid on table Z, and the treadle O is depressed by the operator's foot, so as to move the arm G to the right, and to oblige its wrist *g* to take part in the vibrations of the bell-crank D. A less or greater displacement of the arm G is made, according to the desired stroke of the chisel. It will be seen that all the movements of the wrist *g* are in parts of circles and around centres, and consequently are effected without restraint, detention, or lost motion, and with little labor to the operator,

and that wrist K, occupying the oblique slot *l*, is held positively and immovably to its work without jarring the operator. It is also apparent that the treadle may be depressed as often as desired, without reversing the chisel, the latter action following only upon a full stroke of the chisel, resulting from a complete depression of the treadle, as it is only under these conditions that the spur *l''* becomes operative on the trigger movement so as to release the sleeve and to permit the spring W to come into play for the semi-rotation of the stem.

I do not broadly claim the changing of the stroke of the chisel-bar by means of a crank and connecting devices; but I claim herein as new, and of my invention—

1. The arrangement of continuously vibrated bell-crank D, having the arm G and wrist *g* connected on one side by pitman H to the chisel-bar, and on the other side to a wrist, K, actuated by an obliquely slotted slide, L, under control of the operator, constructed and operating substantially as and for the purpose set forth.

2. The arrangement of fast and loose sleeves Q and R upon the chisel-shaft or stem, engaging and releasing pawls or catches S and T, cord U, and pulley V, in combination with the catch or trigger X, and tappet *l''*, rack and pinion *v' l'*, and actuating and balancing-springs W and N, constructed and operating substantially as and for the purpose set forth.

In testimony of which invention I hereunto set my hand.

C. L. ZEIDLER.

Witnesses:

GEO. H. KNIGHT,

JAMES H. LAYMAN.