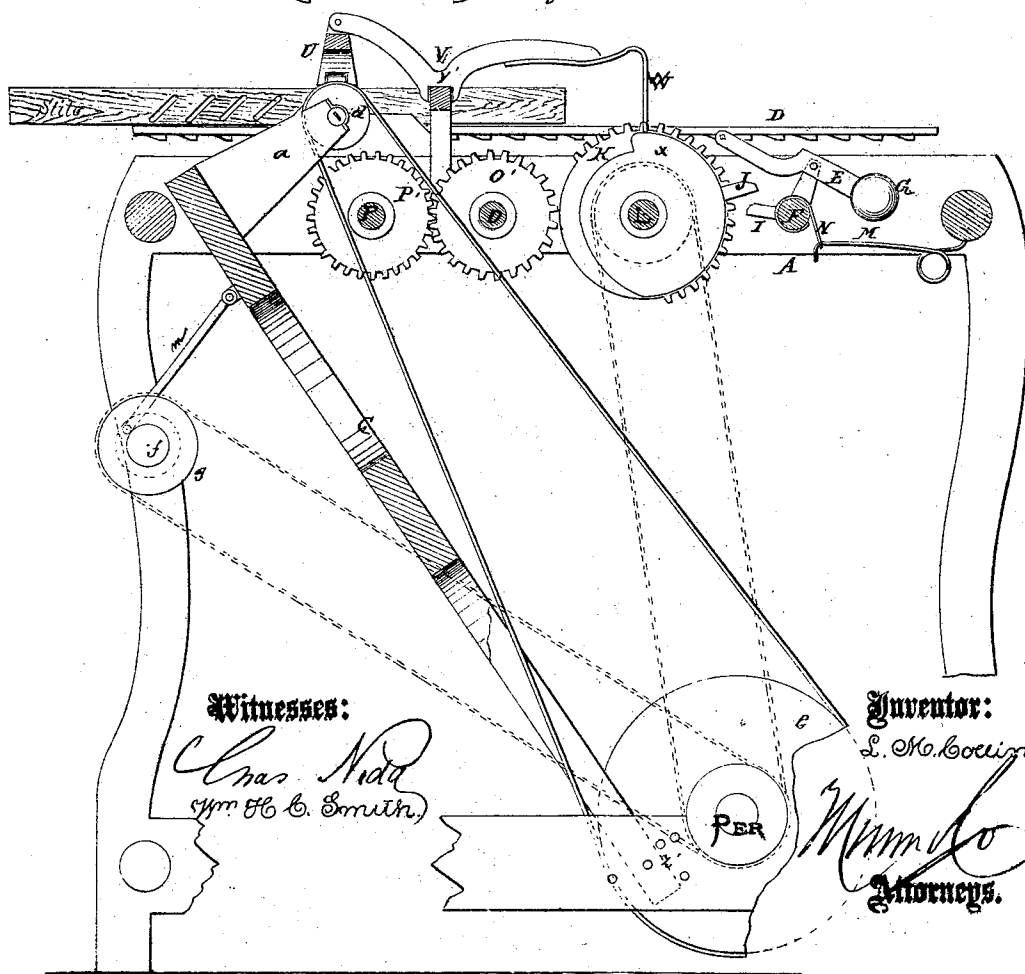
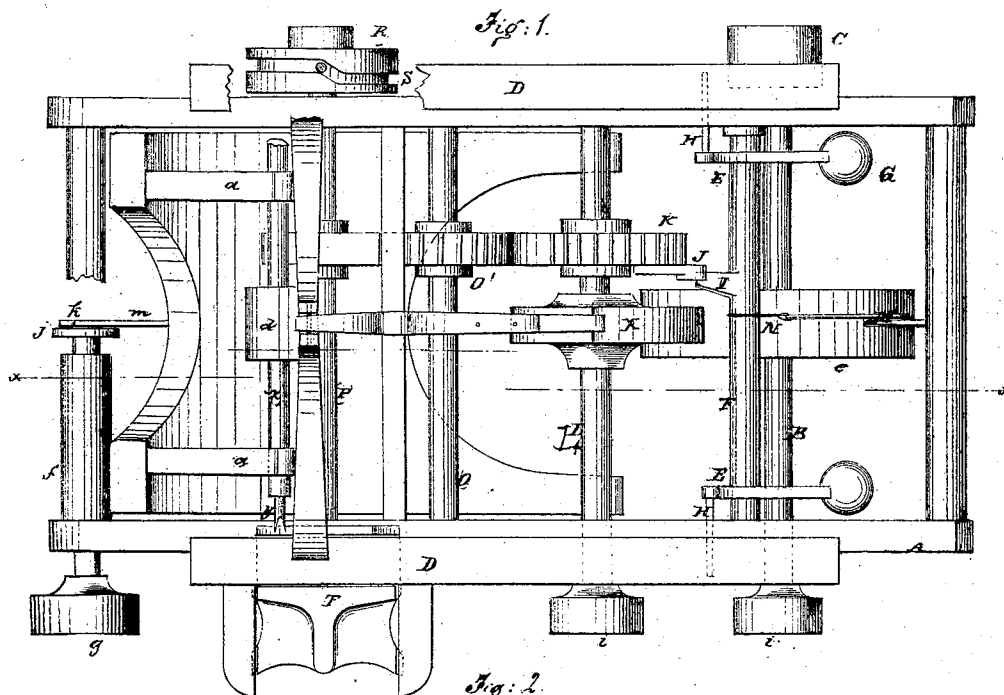


L. M. COLLINS.

Improvement in Machines for Mortising Blind-Stiles.

No. 114,765.

Patented May 16, 1871.



UNITED STATES PATENT OFFICE.

LAROE M. COLLINS, OF LEBANON, NEW HAMPSHIRE.

IMPROVEMENT IN MACHINES FOR MORTISING BLIND-STILES.

Specification forming part of Letters Patent No. **114,765**, dated May 16, 1871.

To all whom it may concern:

Be it known that I, LAROE M. COLLINS, of Lebanon, in the county of Grafton and State of New Hampshire, have invented a new and useful Improvement in Blind Mortising and Boring Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

This invention relates to new and useful improvements in machines for cutting mortises for the slats of window-blinds, when the slats are fixed, and for boring holes for revolving slats; and consists in the manner of holding the stile of the blind in place while the same is being mortised and bored, and in the mode of feeding the stile, as will be hereinafter more fully described.

In the accompanying drawing, Figure 1 represents a top or plan view of the machine, partly in section. Fig. 2 represents a vertical section of Fig. 1, taken on the line *x x*.

Similar letters of reference indicate corresponding parts.

A is the frame. B is the driving-shaft. C is the driving-pulley on the shaft B.

D D are slides on which the blind-stiles are laid for mortising or boring, the construction and arrangement being such that two stiles are operated upon simultaneously. The under sides of slides D D are notched, so as to form ratchet-teeth, as seen in Fig. 2.

E are the feed-pawls, pivoted to arms on the rock-shaft F, as seen in Fig. 2, having a weight, G, at one end, and a laterally-projecting finger, H, at the other end. These fingers engage with the ratchet-teeth on the under sides of the slides D D.

I is a lug on the shaft F, and J is a toe on the side of the intermitting gear-wheel K, which latter is on the shaft L. The shaft L is driven by a belt on the pulleys *i i*.

At every revolution of the shaft the toe J strikes the lug I, thereby rocking the shaft and throwing the fingers H forward, and thus moving the slides. The distance the slides are thus moved and the stiles fed governs the distance of the mortises from center to center.

The back motion of the shaft F is produced by the spring M and cord N, arranged to operate as seen in Fig. 2.

The shaft O simply bears an intermediate gear-wheel, O', for imparting motion to the shaft P by the wheel P'. On the ends of this shaft P are disks R, each of which has a cam-groove, S, as seen in Fig. 1.

T is a sliding plate at each side of the machine, which guides the slides D D. These plates have a pin on their under sides, which engages with the grooves S.

By this means the plates and the stiles thereon are moved at a right angle with the feed-motion of the stiles. The cams carry the stiles laterally toward and from each other, which motion gives the mortises their depth.

The stiles are held down on the plates while the mortises are being cut by the binder U. This binder is pivoted to the lever V, the fulcrum of which lever is at the point V'. W is a toe-bar attached to the lever. X is a cam-wheel on the shaft L. At each revolution of the shaft L the toe is raised by the cam and the binder U is pressed down upon the stiles, thus holding the stiles firm while the mortise is being cut.

The binder and feed mechanism (already described) operate alternately.

The intermitting gear K is so adjusted with regard to the other gear-wheels that the groove-cams are held motionless after the mortising-bits have penetrated the stiles the required depth until the two mortises are completed.

y represents the mortising-bit on each end of the shaft Z. This shaft Z revolves in boxes on the arms *a a* of the adjustable inclined carrying-plate C'. The shaft Z is driven by a belt on the pulley *d* from the pulley *e* on the driving-shaft B, as represented in the drawing. The plate C' is supported on pivots in the lower side rails of the machine, where it may be adjusted, so as to vary its position or inclination, and thereby vary the angle or bevel of the mortises in the stile, seen at *y'*.

f' is a shaft, which is revolved, by means of a belt on the pulley *g*, from the pulley *i* of the driving-shaft B. On the other end of the shaft *f'* is a face-wheel, *j*, in which is a crank-pin, *k*. *m* is a pitman, which connects the face-

wheel with the back of the plate C', as seen in Fig. 2. At each revolution of the shaft *f'* it will be seen that the pivoted carrying-plate C' (with the bits or cutters) will be carried in an oblique direction back and forth, cutting a mortise slightly circular.

The directions which the bits are thus made to move govern the bevel or angle of the mortises in the stiles, as the bits are revolving and at work when thus moving in one direction.

As before stated, the bevel or angle of the mortises is changed by varying the position of the foot of the plate C'.

For simply boring holes for the revolving of slat-blinds, the operation is the same as already described as regards the feeding and holding of the stiles and the lateral motion given the stiles by means of the cams S; but the bit-carrying plate C' is held stationary.

I am aware that a blind mortising and boring machine is not a new thing, though working in a manner somewhat similar to that

above described. I therefore disclaim any and every part of any such machine as may be claimed under a patent or patents, and confine myself to my modes of feeding, holding, and obtaining and varying the bevel or angle of the mortises.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The method herein described of feeding the stile by means of the shaft F I, arm E, shaft L, gear-wheel K J, and slides D, provided with ratchet-teeth, as shown and described.

2. The method herein described of holding the stiles by means of the binder U, lever V, spring W, and cam X, as shown and described.

LAROE M. COLLINS.

Witnesses:

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F. A. CUSHMAN.