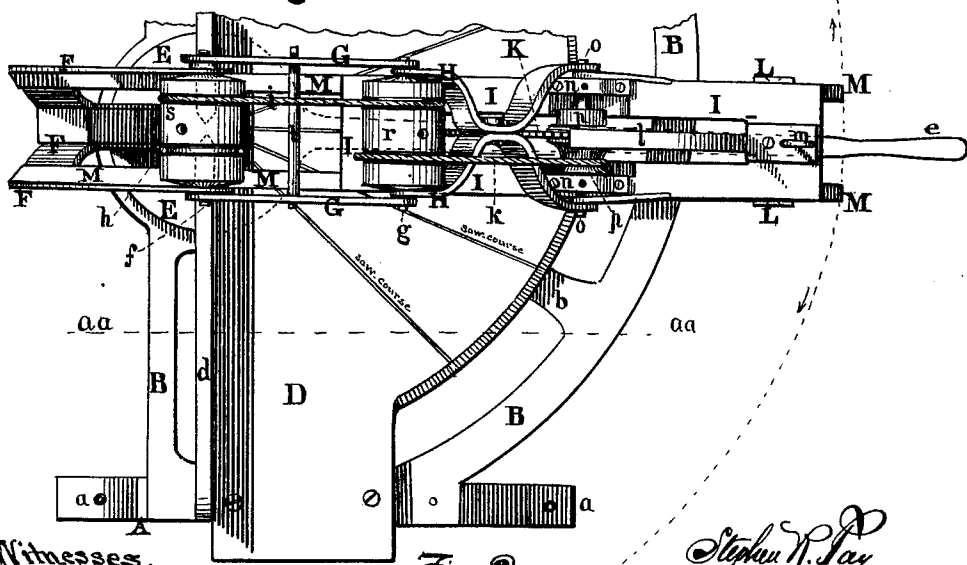
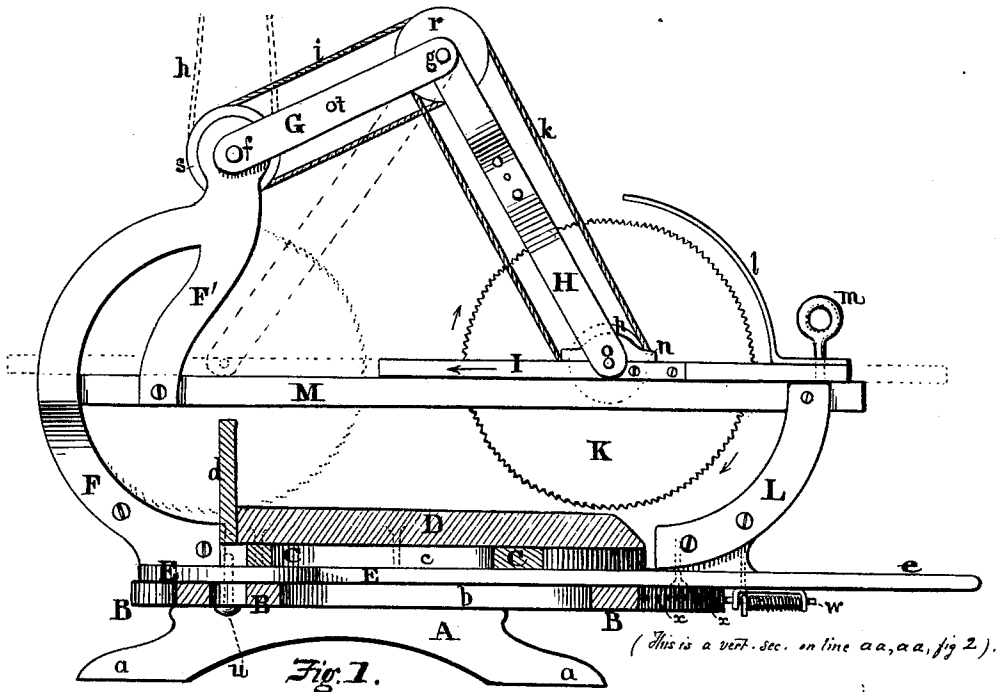


S. R. PAY.

MITERING-MACHINE.

No. 176,343.

Patented April 18, 1876.



Witnesses.  
 John Anderson  
 Chas. C. Barton

Fig. 2.

Stephen R. Pay  
 by O. S. Thurston  
 of his atty in fact

# UNITED STATES PATENT OFFICE.

STEPHEN R. PAY, OF PEORIA, ILLINOIS.

## IMPROVEMENT IN MITERING-MACHINES.

Specification forming part of Letters Patent No. **176,343**, dated April 18, 1876; application filed February 9, 1876.

*To all whom it may concern:*

Be it known that I, STEPHEN R. PAY, of the city of Peoria, in the county of Peoria, and in the State of Illinois, have invented an Improvement in Mitering-Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a sectional elevation; Fig. 2, a superficial view.

The object of this invention is to obviate a center-post or standard for the pivot of the saw-frame, such an obstruction being much in the way of the free motion of said frame, and I do this by curving the arm (rising from the pivot) backward, and thence forward again to a point over the pivot, to allow the saw to traverse the center of said pivot, so that the operator can fix his stuff knowingly, without the trouble of calculating the exact point where the "saw-cut" will enter or leave the wood, which in this machine is always a certain fixed point—*i. e.*, over its pivot. I am aware that a pivoted saw-slide, for cutting heavy work, has been used before; but the saw does not traverse the pivotal point of its frame, and the latter is supported entirely upon a lateral bearing radiating from the pivotal standard, and from having but one support is thus rendered unsteady. I obviate this difficulty by providing a bearing for the outer end of my saw-frame beyond the margin of my table. I also simplify my running-gear by using but two band-pulleys instead of four, thus much lightening the machine, and which I use only to cut picture-moldings or other light stuff; and it consists of a fixed semicircular base or bed, (to receive the wood to be cut,) with a saw-frame and bed or slide above, pivoted at one end at the center of said semicircular bed (at the vertical back-rest) upon a revolving disk or horizontal table below said bed. The frame radiates from said pivot across the lower bed, and is supported at the free end upon an arm beneath, which also radiates from the table of said pivot, and rests upon a guide-bed below the operating-bed, or bed on which the wood is cut. Said arm ter-

minates in a handle beyond the outer end of the saw-frame, by which the latter is moved round the latter bed at any angle with the vertical back-rest of said bed, which rest extends across the pivot of said saw-frame. In a frame erected upon and above the disk or table is set a pulley or band-wheel, which rotates on a horizontal spindle immediately over and in the prolongation upward of a line passing through the axis of the pivot of the saw frame. This pulley receives motion from the motive power by means of a vertical band from above, running in the line of said prolongation from said pivot, in order that the swinging motion of said pulley may not throw the band out of gear. The spindle of this pulley is made the joint for a second frame extending radially from said pivot and above said frame, and which carries another band-pulley at its extremity, whose spindle is again the joint of a third frame, which descends at an angle, and is jointed at its lower end to the center of the arbor of the sliding saw-frame. These two pulley-frames are so jointed and arranged as to allow free motion to the saw and its carrier or sliding frame back from or toward the central pivot, and also the side motion round the outer edge of the operating bed or platform. In short, the circular saw works radially back and forth from the pivot at any required angle, the advantages being that mitering or beveling can be accomplished without reversing the wood end for end, the saw being the only thing moved in the operation.

In the drawings, which represent one of the forms in which I construct my machine, A represents the base or supports of the machine, *a a* being legs or lugs by which it may be fastened to a bench; B, a horizontal bed plate or frame, lying on and secured to said supports A below and supporting the pivoted table or rotating disk E, *u* being its pivotal pin, and the arm *e* of said disk, which supports the outer end of the saw carrier or slide I. C represents the frame which supports the wooden sawing-platform D, made semicircular on the outer side, as indeed is the case with all the foregoing frames. From the back edge of said sawing-platform D rises the usual ledge or vertical back-rest, against which the wood

to be sawed is held. Said ledge runs over and across the center of the pivot *u* of the table or disk *E*, at which point is an opening to allow the saw to pass at any angle. *F F'* represent a frame. (erected upon and rotating with the pivoted disk *E*,) which supports the inner end of the bed *M*, and so arranged that the saw can pass along said bed over the pivot *u*. The upper end of said frame carries a horizontally-pivoted band-pulley, *s*, whose fixed axle or spindle *f*, which braces the bars of the frame *F F'* and extension *G* together, is in the plane of the axis of said pivoted disk *E*. *G* is an extension of said frame *F F'*, composed of parallel side bars, inclosing the pulleys *s* and *r*. The latter frame terminates at its outer end with a second band-pulley on a fixed spindle, *g*, parallel with the former pulley. The two pulleys are united by a band, *i*. *H* is a third frame, (of similar construction to the others,) extending down to and pivoted at the axis of the saw to the saw carrier or slide *I*. These two latter frames allow free motion to the saw *K*, maintaining at the same time the integrity of the pulleys and bands, as also of the first pulley *s*, which receives the vertical band which is designed to run the saw from above the saw-carrier—a slotted frame with saw bearings *n n*, which slide upon the bed or frame *M M*. It is provided, also, with a handle, *m*, to govern it, and a hand-guard, *l*, over or in front of the saw *K*, the saw having the usual arbor and side pulley for the belt *k*, which passes over the nearest pulley *r* at the junction of the oscillating frames *G H*. *L* is a brace, erected on the outer end of the arm or handle *e* of the rotating disk *E*, and supports the outer end of the saw frame or bed *M*. Beneath the arm *e*, at the outer edge of the frame *B*, is a spring-bolt to detain the frame *M* (when the

saw is at work) in the holes *xx* in the vertical semicircular edge of said frame *B*.

I do not claim the devices shown and claimed in the patent to J. H. Curell, patented November 1, 1870, No. 108,886; but

What I do claim is—

1. The saw frame or slide *M*, when extended over and across its pivotal point or axis *u* to the opposite side of the table *D*, and there fixed to and supported on a radial lever, *e*, for the purpose of allowing the saw *K* to traverse the axis of said pivot, substantially as described.

2. The saw frame or slide *M*, supported at its free end on an arm or lever, *e*, radiating from the disk *E* or pivot, and extending across the bed *D*, over and across its pivot *u*, and attached to curved arm *F'*, rising from the pivot or its disk *E*, substantially as and for the purposes described.

3. The combination, with the pivoted saw-frame *M*, of pivot-frame *F*, pivotal disk *E*, arm *e*, provided with catch *w*, and brace *L*, substantially as and for the purposes described.

4. The combination and arrangement of the bed *D C B*, pivotal table *E*, frame *F*, attached to the saw-frame *M*, and provided with pulley *s* and axle *f*, frame *G G*, fixed axle *g*, provided with band-pulley *r*, frame *H*, attached to saw-carrier *I*, operated as and for the purposes described.

In testimony that I claim the foregoing miter and bevel machine I have hereunto set my hand this 31st day of January, A. D. 1876.

STEPHEN R. PAY.

Witnesses:

H. W. WELLS,  
JAS. M. MORSE.