B. MERRITT.

Scroll-Sawing Machine.

No. 208,411. Patented Sept. 24, 1878.

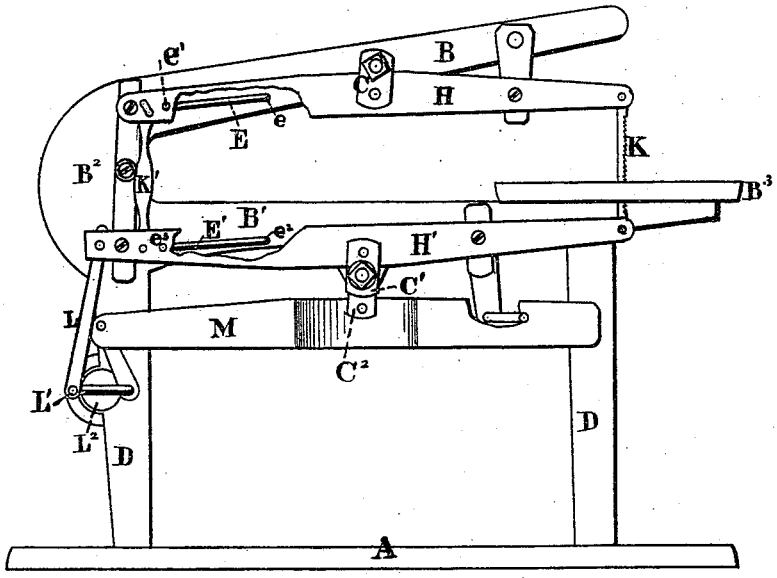


Fig. 1.

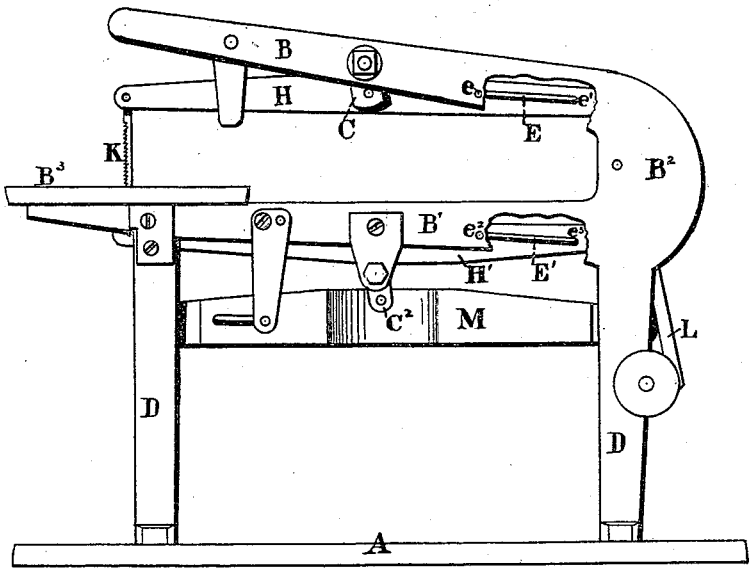


Fig. 2.

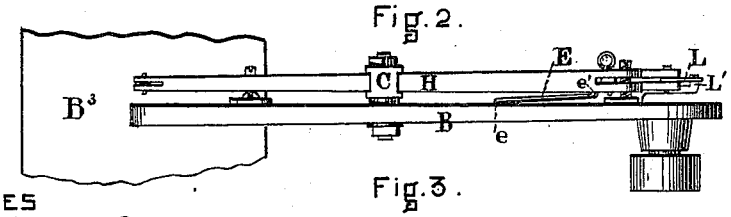


Fig. 3.

WITNESSES

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# UNITED STATES PATENT OFFICE.

BENJAMIN MERRITT, OF NEWTON, MASSACHUSETTS.

## IMPROVEMENT IN SCROLL-SAWING MACHINES.

Specification forming part of Letters Patent No. **208,411**, dated September 24, 1878; application filed March 11, 1878.

*To all whom it may concern:*

Be it known that I, BENJAMIN MERRITT, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Jig-Saws, of which the following is a specification:

The nature of my invention consists in hanging a jig-saw blade upon two parallel levers, said levers being hung upon independent swinging joints, each lever being connected by a comparatively short link to the rigid part of the frame, so that as the levers vibrate up and down these short links will so govern their motions that the saw itself will move in a straight line.

In the drawings, Figure 1 is a front elevation, a part of each of the saw-holding levers being represented as broken out to show the governing-links. Fig. 2 is a rear elevation of the same. Fig. 3 is a plan, showing part of my device.

A D B $B^1$ $B^2$, Figs. 1 and 2, represent the frame of my machine, $B^3$ being the saw-table. H H′ are parallel levers hung by swinging links or joints C $C^1$ to the frame, as shown. K is the saw, which is attached by any suitable device to the ends of the levers H H′, K′ being a link for connecting the opposite ends of the said levers. In addition to the swinging links C $C^1$ for connecting the levers H H′ to the frame, I make an additional connection by means of the links E and E′, the link E being pivoted to the part B at *e* and to the lever H at $e^1$, while the link E′ is connected to the part $B^1$ at $e^2$ and to the lever H′ at $e^3$.

From the above it may be seen that if a tilting motion be given to these levers H H′, as it may be by the link L and crank $L^1$, they will have a compound motion—that is, they will be forced by the links E and E′ to move back and forth in the direction of their length, the swinging links C and $C^1$, to which they are attached, admitting of this motion, and when all of the parts are properly proportioned the resultant motion of the saw K will be practically in a straight line.

In practice I have adopted the following proportions between the parts: The levers H H′ are three and one-half ($3\frac{1}{2}$) feet long, hung on their centers, the swinging links or joints C $C^1$ being each four (4) inches in length, while the governing-links E and E′ are each ten and one-half ($10\frac{1}{2}$) inches in length. These proportions may be varied somewhat without varying the practicable results.

M is a balance-beam, hung at $C^2$, and connected to the crank-disk $L^2$ at a point diametrically opposite to the saw-driving crank $L^1$, so that the beam M in its motion shall balance this *vis viva* of the levers H H′, and thus insure steadiness to the machine.

I claim as my invention—

The combination of the saw K, the levers H H′, and the swinging links C $C^1$ with the governing-links E E′, all operating substantially as described, and for the purpose set forth.

BENJ. MERRITT.

Witnesses:
THOMAS MUIR,
A. HUN BERRY.