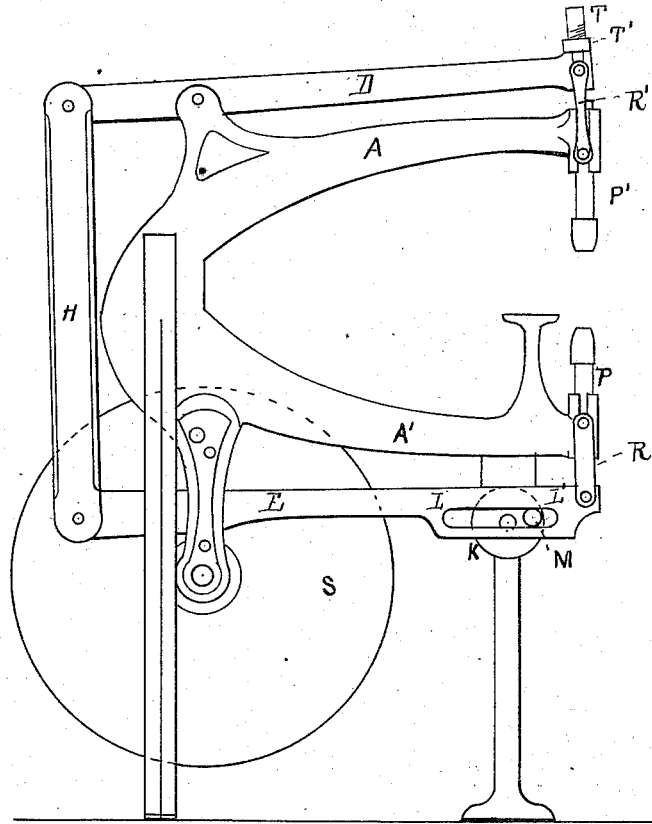


J. HALE.
Scroll-Sawing Machine.

No. 160,768.

Patented March 16, 1875.



Witnesses

Frankl. Parker

H. Floyd Faulkner

Inventor

Joseph Hale

Wm. William Edison

UNITED STATES PATENT OFFICE.

JOSEPH HALE, OF SOMERVILLE, MASSACHUSETTS.

IMPROVEMENT IN SCROLL-SAWING MACHINES.

Specification forming part of Letters Patent No. **160,768**, dated March 16, 1875; application filed March 20, 1874.

To all whom it may concern:

Be it known that I, JOSEPH HALE, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Scroll-Sawing Machine, of which the following is a specification:

The nature of my invention consists in combining with the swinging arms of a fret-saw slides working in fixed grooves, said slides serving to hold the saw, and thus directing its motion; also, in arranging one of the slides so that it may be strained up to make the saw taut.

The drawing represents the invention in elevation.

Let S represent the driving-wheel, from which a band connects with the crank-disks K. On this crank-disk I place a crank-pin, *m*, which, working through a slot, L L', in the arm E, operates said arm. The arm E is connected by a link, H, to the upper arm D, so that the arms E and D must operate together. A and A' is a fixed frame, made as shown.

In the extremities of the arms of this fixed frame I hang the slides P P', which work in fixed grooves. These slides P P' hold the ends of the saw, and are attached to the oscillating arms E and D by the links R and R', as shown, so that the saw may have a perfectly vertical motion. The upper link R' is connected to an adjustable rod, T, which is held at the desired point by the set-nut T'.

The advantage that I claim for my invention is that I get a perfectly vertical motion by a very simple and cheap device.

I claim as my invention—

In a fret-saw, the combination of the crank K M, slotted arm E, link H, and arm D with the links R R', slides P P', and adjusting-rod T, all constructed and operating together, substantially as described, and for the purpose set forth.

JOSEPH HALE.

Witnesses:

FRANK G. PARKER,
WILLIAM EDSON.