

N^o 51, 105,

Scroll Saw,

Patented Nov. 21, 1865.



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IMPROVEMENT IN SCROLL-SAWS.

Specification forming part of Letters Patent No. 51,105, dated November 21, 1865.

To all whom it may concern:

Be it known that I, A. D. CAMPBELL, of the city of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Gig or Scroll Saws; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front-side elevation of a gig-saw with my improvements. Fig. 2 is a central vertical section of the same at right angles to Fig. 1.

Similar letters of reference indicate corresponding parts in both of the figures.

My invention relates more particularly to that class of gig-saws which are operated by foot-power through the medium of a treadle or treadles, to the rock-shaft of which is attached an inverted pendulum, which is connected with the lower end of the saw-blade in such manner as to produce two strokes of the saw for every oscillation of the treadle; and it consists in certain means whereby such a saw is better adapted to meet the requirements of heavier and lighter work and the spring employed to raise the saw is relieved of unnecessary tension in a quick motion with light work.

To instruct others skilled in the art to make and operate my invention, I will describe the construction and operation of the same with reference to the drawings.

A is a table, having rigidly attached to it two standards, B and C, supporting an arm or bracket, D, having attached to its outer end a vertically-adjustable guide-piece, E, through which slides the rod F in bearings *f f*.

On the top guide-piece, E, are bearings for a small pulley, G', over which passes a strap, H, the one end of which is attached to a flat spring, I, and the other end of which is secured to the reciprocating rod F, which rod is furnished with suitable means at its lower end to attach the one end of the saw-blade S, the other end of which is attached to the cross-head J, which slides in guide-grooves *g g* in a rigid hanger, X, secured under the table A. The cross-head J is furnished with a hook, *h*, to which is attached one end of a strap, H²,

which passes between a pair of guide-rollers working in bearings in the hanger X, the outer end of which is attached to a horizontally-reciprocating bar, K, which is connected by a slot-and-pin connection, *t*, with the upper vibrating end of an inverted pendulum, L, which is secured to a rock-shaft, M, which oscillates in bearings *b b* on the frame-work of table A. The pendulum L is situated directly under the saw and bar K, and is guided in its operation by the said bar. The weight W of the pendulum is made adjustable upward and downward and secured in the desired position by a set-screw, *p*, Fig. 1.

r r r' r' are friction-rollers working in bearings in the hanger X, the two former situate above and the two latter ones below the bar K, to guide the said bar in its rectilinear reciprocating motion.

The pendulum is operated by the feet of the person being applied to the two treadles T T, which are secured to the rock-shaft M, and one of which extends backward and the other forward from the center of the rock-shaft, in order that the stroke of the pendulum may be made in one direction by the one treadle and the return-stroke by the other treadle. The oscillation of the pendulum produces the reciprocating rectilinear motion of the bar K, and the latter motion produces through the strap the downward movement of the saw, the upward movement of which is produced by the spring I.

The momentum of the bar K, when in operation, is arrested and made to assist its return-stroke in either direction by means of springs P P, which are secured one at each end of the table opposite the ends of the bar K.

When very heavy or thick stuff is required to be sawed the weight W may be adjusted high or near the end of the lever, in order that a greater momentum may be gotten up; but when comparatively light stuff is to be worked the weight should be adjusted lower down, in order that its momentum may be reduced, and the stroke may thereby be made quicker, with less labor to the feet of the operator, and that by shortening the stroke of the saw the spring I may be relieved of unnecessary tension in the quicker motion thus obtained.

The saw may be operated by the pendulum being attached directly to the strap H².

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The adjustable weight W, applied to the inverted pendulum L, to operate substantially in the manner and for the purpose as herein described.

2. The springs P P, applied in front of and behind the inverted pendulum, to operate substantially as herein set forth.

A. D. CAMPBELL.

Witnesses:

J. W. COOMBS,
A. LECLERC.