(Model.)

2 Sheets—Sheet 1.

F. SCHAEFLE.

Scroll Saw.

No. 237,912. Patented Feb. 15, 1881.

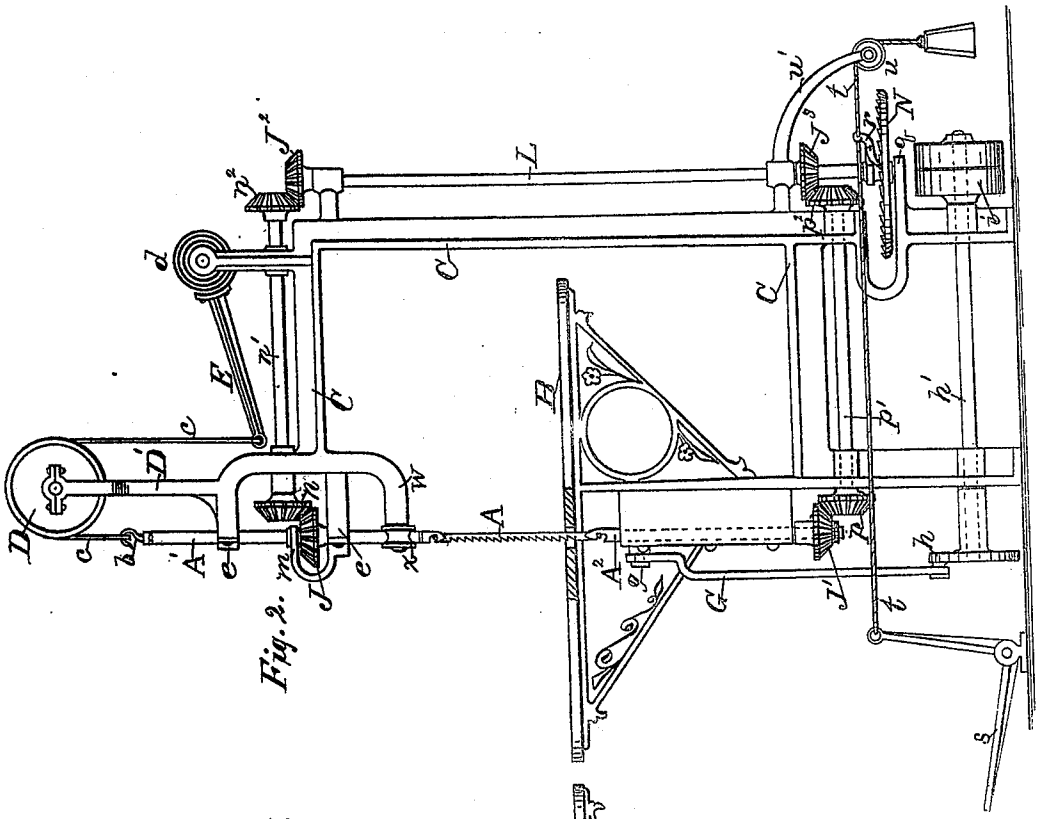


Fig. 2.

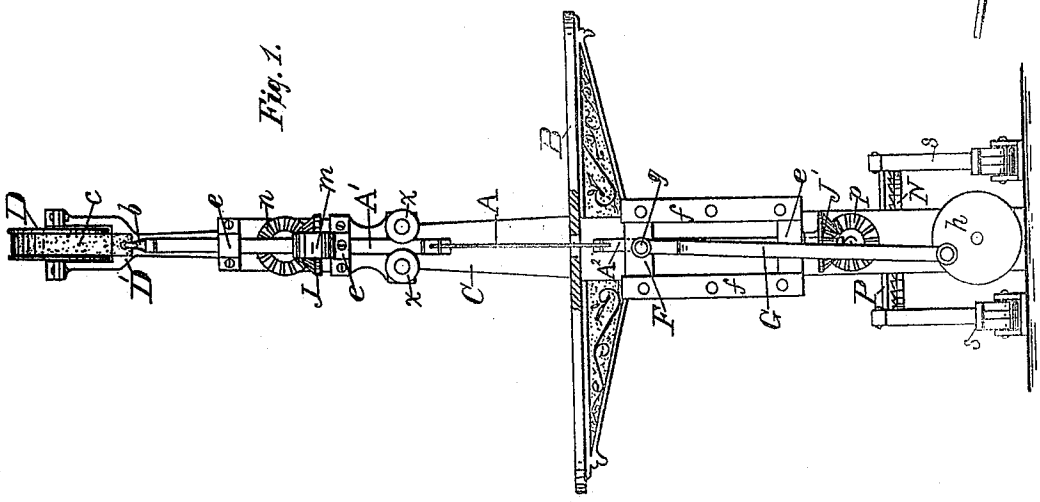


Fig. 1.

Witnesses:
Geo. A. Boyden
A. C. Eader

Inventor:
Friedericke Schaefle
By his Atty
Chas B. Mann

(No Model.) 2 Sheets—Sheet 2.

F. SCHAEFLE.

Scroll Saw.

No. 237,912. **Patented Feb. 15, 1881.**

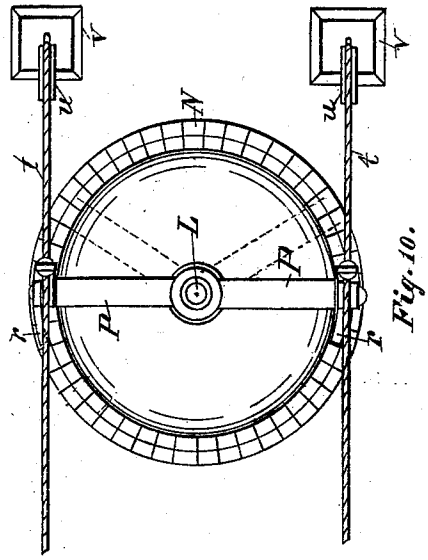


Fig. 10.

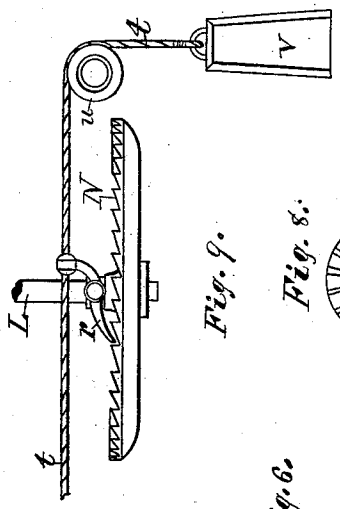


Fig. 9.

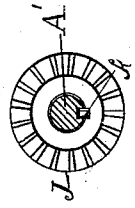


Fig. 8.

Fig. 6.

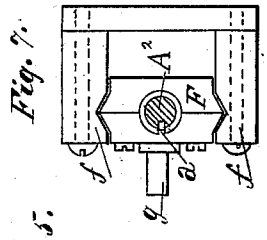
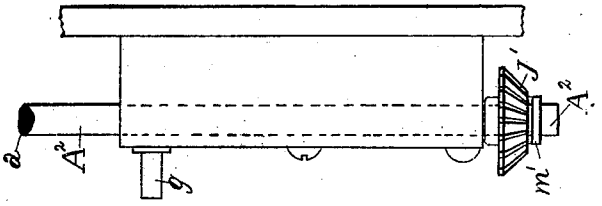


Fig. 7.



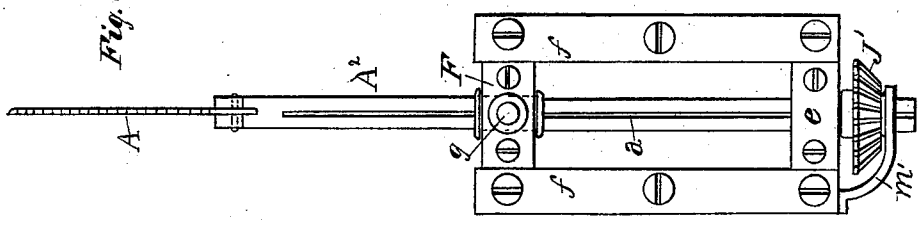


Fig. 5.

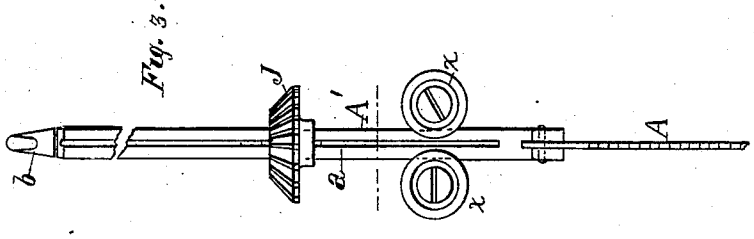


Fig. 3.

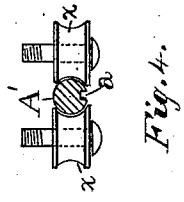


Fig. 4.

Witnesses:

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Inventor:

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By his Atty

Chas B. Mann

UNITED STATES PATENT OFFICE.

FRIEDERICH SCHAEFLE, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO FREDERICK L. VOLZ, OF SAME PLACE.

SCROLL-SAW.

SPECIFICATION forming part of Letters Patent No. 237,912, dated February 15, 1881.

Application filed November 29, 1880. (No model.)

To all whom it may concern:

Be it known that I, FRIEDERICH SCHAEFLE, a citizen of the German Empire, residing at Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Scroll-Saws; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements combined in a gig-sawing machine of that class in which the saw is adapted to be revolved while it reciprocates.

The improvement will first be described, and the invention then designated in the claims.

In the accompanying drawings, Figure 1 is a front elevation of a machine embodying the invention. Fig. 2 is a side elevation of same. Fig. 3 is a detail view, larger scale, of upper slide-rod. Fig. 4 is a cross-section of same, showing guide-rollers. Fig. 5 is a front view of lower slide-rod and guides. Fig. 6 is a transverse view of same. Fig. 7 is a top view of cross-head and guides. Fig. 8 is a cross-section of slide-rod, showing the bevel-wheel and feather. Figs. 9 and 10 are views of the double ratchet-wheel, pawls, and weights.

The letter A designates an ordinary saw; B, the table; C, the frame by which the upper end of the saw is supported. Each end of the saw is attached to a vertically-sliding rod, the upper one being designated by the letter A′, and the lower one by the letter A^2. In cross-section these rods are round, in order that they may both slide and turn in their stationary guides *c*. Each rod has a groove, *a*, extending lengthwise, for a purpose hereinafter named. The upper end of the upper rod has a hook, *b*, swiveled thereto. A pulley, D, is mounted on a standard, D′, upon the top of the frame, and a band, *c*, of any suitable material is attached by one end to the hook and passed over the pulley, and by the other end to the movable end of a pivoted arm, E, on which a spring, *d*, acts to keep said end of the arm normally depressed. This arm, by drawing constantly on the band, serves to keep the saw taut or strained on its upward stroke. The lower rod has a cross-head, F, secured to it, which slides up and down in guides *f f*. Attached to the cross-head is a pin, *g*, to which the pitman G connects. The other end of the pitman is attached to the crank-head *h*, mounted on the drive-shaft *h′*, to which power is applied by the pulley *i*.

To cause the saw to revolve or partly revolve while in motion, a bevel-gear wheel, J, is provided and placed to turn in a horizontal plane, and has a central eye, through which the upper slide-rod passes. A lug or feather, *k*, (see Fig. 8,) secured in the eye of the wheel, fits in the groove *a* of the rod, and prevents the rod from turning within the eye, but allows it to slide freely endwise. This wheel is held to its seat by a curved plate, *m*, and gears with a wheel, *n*, mounted on a horizontal shaft, *n′*. Another bevel-gear wheel, J′, is placed to turn in a horizontal plane, and is constructed with an eye and feather exactly like the wheel J, and through the said wheel J′ the lower slide-rod, A^2, passes. This wheel is sustained between the guide *e* and the hanger or bracket *m′*, (see Fig. 5,) and gears with a wheel, *p*, mounted on a horizontal shaft, *p′*. At the end of each of the shafts *n′* and *p′* is a bevel-gear wheel, (designated, respectively, n^2 and p^2.) A vertical shaft, L, carries two bevel-gears, J^2 and J^3, which are engaged with the wheels n^2 and p^2. The lower end of the vertical shaft is sustained by the step *q*, and near the lower end a crown double ratchet-wheel, N, is secured. Two arms, P, are each separately pivoted by one end to the vertical shaft L, just above the crown ratchet-wheel, and each arm carries at its extremity a pawl, *r*, which engages with one of the two circles of ratchet-teeth. One arm and pawl is arranged to turn the wheel in one direction, and the other arm and pawl in the opposite direction.

Upon the floor, at the front of the machine, are two treadles, *s*, shaped like a bell-crank lever. From the upward-projecting part of each of the treadle-levers a cord, *t*, extends back and over the ratchet-wheel, and to each of the cords one of the pawls *r* is attached. The cord thence passes over a pulley, *u*, suspended from a hang-

er, w', and at the end of each cord a weight, V, is suspended. The weights draw the arms P and pawls back, so that the normal position of the arms is indicated by the dotted lines in Fig. 10. The depression of the right-hand treadle will cause the ratchet-wheel to be partly turned from the right side toward the front of the machine, and upon the foot being raised the weight V will draw the pawl back, when the ratchet-wheel may be further partly turned by again depressing the treadle. Whenever the ratchet-wheel is turned the vertical shaft L is also turned, and this, through the medium of the bevel-gears above and below, effects the turning of the saw, as will be readily understood. By this mechanism the saw may be turned in either direction partly or entirely around while reciprocating.

From an arm or hanger, W, attached to the front of the frame, two grooved rollers, x, are mounted side by side, with their grooved faces confronting each other, as shown in Figs. 1, 2, 3, and 4. These rollers serve as a guide for the upper slide-rod, A'.

I do not claim, broadly, treadles for revolving the gig-saw, as I am aware such have been used in combination before.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a gig-sawing machine, the combination of a sliding saw-rod, A', round in cross-section, a grooved roller, x, on each of two sides of the rod, with their grooved faces confronting each other, a wheel, J, through which the sliding rod may move freely endwise without turning, and mechanism, substantially as described, to rotate the wheel and saw-rod, as set forth.

2. In a gig-sawing machine, the herein-described means for revolving the saw while it reciprocates, consisting of a vertical shaft, L, connected with the vertically-sliding saw-rods A' A^2, a ratchet-wheel, N, to rotate the shaft, two arms, P, each pivoted by one end to the vertical axis above the ratchet-wheel, and each carrying at its other end a pawl, r, to engage with the ratchet-wheel, a weight connected with each arm to draw it back, and a treadle connected therewith to draw it forward, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FRIEDERICH SCHAEFLE.

Witnesses:

GEO. MCCAFFRAY,

L. H. ROBINSON.