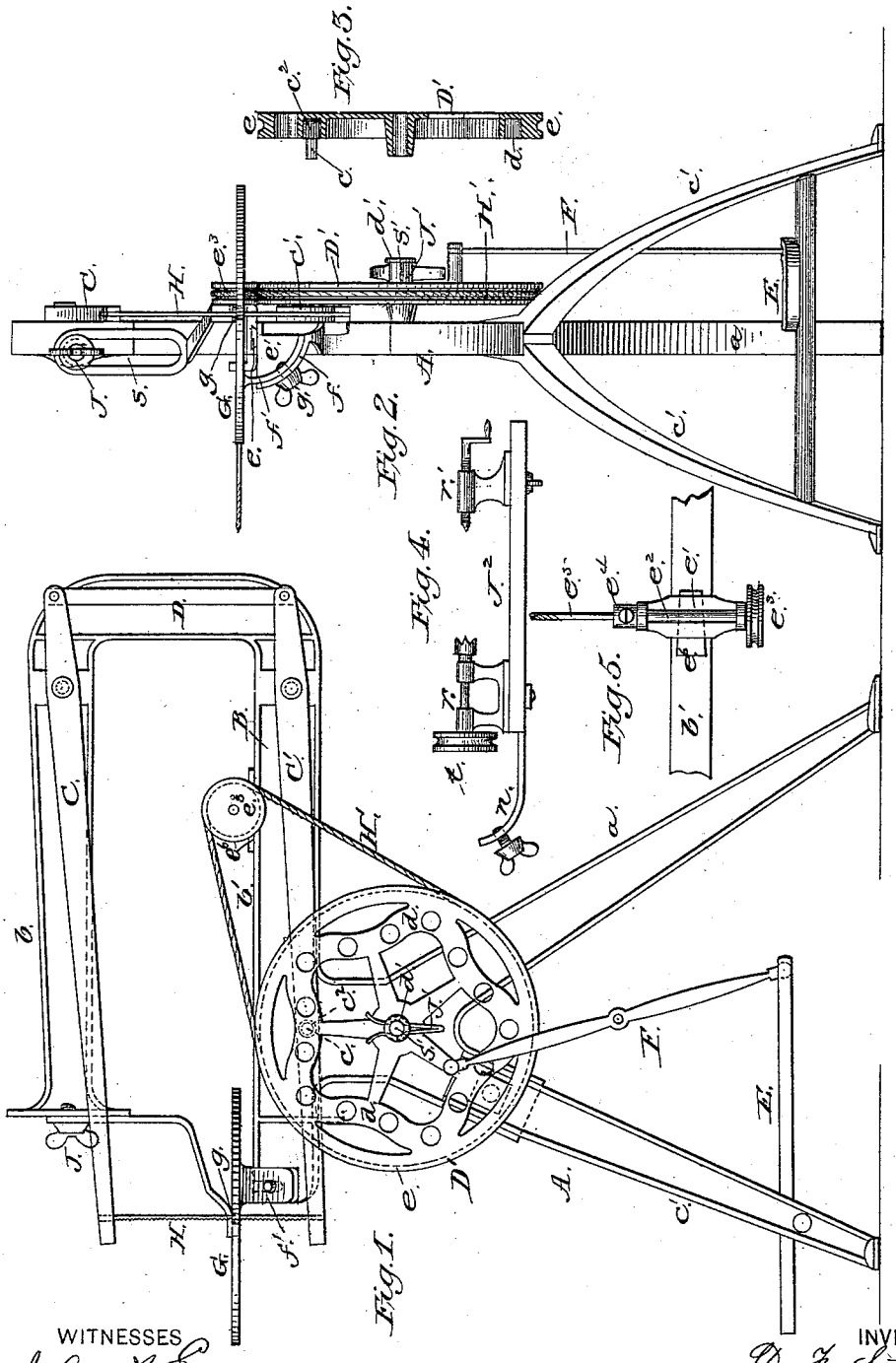
D. F. SUTTON.
Scroll-Saw.

No. 226,130 Patented Mar. 30, 1880.



WITNESSES
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UNITED STATES PATENT OFFICE.

DELAY F. SUTTON, OF ROCHESTER, NEW YORK.

SCROLL-SAW.

SPECIFICATION forming part of Letters Patent No. 226,130, dated March 30, 1880.

Application filed September 2, 1879.

To all whom it may concern:

Be it known that I, DELAY F. SUTTON, of Rochester, in the county of Monroe and State of New York, have invented a new and valuable Improvement in Scroll-Saws; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view of my improved scroll-saw. Fig. 2 is a front end view thereof, and Figs. 3, 4, and 5 are details.

This invention has relation to improvements in scroll-saws.

The object of my invention is mainly to utilize the mechanism that drives the saw in operating a drill or, at pleasure, a lathe; and the nature of the invention consists in a certain adaptation of the mechanism operating the saw to the purposes of a drill or lathe, as will be hereinafter more fully explained.

In the annexed drawings, the letter A designates a metallic frame, usually of the form of a tripod, and having at its upper end a vertically-arranged extension, B, that is of the form of the letter **U**.

The third leg, *a*, and extension B are usually cast together, and the diverging legs *c'*, completing the tripod, are also usually cast in one piece and secured to the other section of the frame by suitable bolts. This construction obtains only when the parts of the frame are made of metal, but, even when so constructed, may be varied, as the state of the art may suggest.

The extension B has two parallel horizontal arms, *b b'*, in each of which is journaled or fulcrumed one of the vertically-vibrating levers C C', connected together by means of a rod, D, pivoted at one end to lever C and at the other to lever C'. This latter has a projecting pin, *c*, fixed thereto and provided with an anti-friction roller, c^2, that engages a star-cam groove, *d*, cast in a wheel, D', having its bearing in the frame A, and driven from a treadle, E, by means of a pitman, F. This wheel D is peripherally grooved, as shown at *e*, and the cam-acting curves are cast therewith. Projecting out laterally from the offset *e'* of arm *b'* is a curved slotted arm, *f*, corresponding to which is a similarly-curved arm, *f'*, attached to a circular table, G, having a central opening, *g*, and adjustably secured to arm *f* by means of a set-screw, *g'*, extending through the slot of the said arm, and engaging a screw-threaded perforation of the arm *f'*. By loosening screw *g'* the table G may be adjusted to a horizontal position or inclined so that the saw will cut on a bevel, if desired. This saw H is strained between the levers C C', and extends through the central opening of the table G, the material being operated upon being held down on the said table by means of a presser-foot, the forked end of which straddles the saw, and, if desired, may serve as a guide therefor. This presser-foot is of angular form, and is secured adjustably to the end of the arm *b* of extension B by means of a set-screw, J, passing through a slot, *s*, in the vertical branch of said foot.

The wheel D' rotates upon a spindle, *s'*, projecting from the frame, and has lateral movement on the said spindle, that is controlled by means of a detachable spring-key, J', interposed between the hub of said wheel D' and a shoulder, *d'*, formed on the end of said spindle. This key being removed, the cam-wheel may be drawn back, disengaging the same from pin *c*, when the treadle may be worked without operating the saw, the said cam-wheel being held in its outward position by introducing the said key between it and the main frame upon the spindle *s'*.

The arm *b'* of extension B has a tapering dovetailed rib, e^6, formed in the length thereof, with its wider end toward the table G, with which is engaged a corresponding dovetailed groove on the under side of a transverse plate, *e'*, affording bearings to a transverse shaft, e^2, having on one end a pulley, e^3, and on the other a socket, e^4, for the reception of a boring-bit, e^5. This shaft is operated by an endless belt, H', passing around the pulleys D' e^3, and when the former is thrown out of gear, as above set forth, the drill may be operated independently of the saw.

By loosening the set-screw *g'* the saw-table may be removed, and a lathe-bed, J^2, substituted therefor, having a laterally-extended

curved arm, *n*, adapted to engage the curved arm of the frame precisely as above described for the saw-table G. This bed contains the usual attachments of a lathe—namely, a chuck and live spindle, (lettered *r*,) and the latter has a pulley, *t*, attached to it, and the tail-stock with its usual attachments *r'*. This pulley is at the same distance from the center of the main driving cam-pulley D' as the pulley on the drill-shaft, and the said minor pulleys are of the same diameter; consequently the belt H' may be shifted from the pulley of the drill-shaft to that of the lathe-chuck.

The operation of the scroll-saw is clear, and it is also clear that by disconnecting the driving-pulley and belt from the saw, as above set forth, the belt may be applied at pleasure to the pulley of the drill, or to that of the lathe, as may be desired.

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

1. In a scroll-saw, the combination, with the frame A, having the U-shaped extension B, having parallel arms *b b'*, of the vertically-vibrating levers C C', fulcrumed, respectively, in said arms, the pivoted connecting-rod D, the saw H, strained between the free ends of said levers, the pin *c*, having anti-friction roller *c'*, and the wheel D, journaled in said frame, and provided with a star-cam, *d*, cast therein and engaged by pin *c* aforesaid, substantially as specified.

2. The combination, with the frame A, extension B, having arms *b b'*, the levers C C', and connecting-rod D, of a pin, *c*, having anti-friction roller *c'*, and secured to lever C', the spindle *s'*, having end shoulder, *d'*, the wheel D, having the star-cam *d*, engaging the said pin, and a removable spring-key interposed between the hub of the driving-wheel and shoulder *d'*, substantially as specified.

3. The combination, with a frame, A, having extension B, and the tapered dovetailed rib on the lower branch of said extension, of the drill-plate having a groove fitting said rib, a transverse socket-shaft carrying a pulley-wheel at one end and a bit-socket at the other, and an endless belt passing around the driving-wheel and said pulley, substantially as specified.

4. The combination, with a metallic frame having an extension, B, provided with parallel arms *b b'*, the vertically-vibrating levers C C', the connecting-rod D, and the curved arm *f*, provided with a threaded perforation, of a lathe-bed, J, having a similarly-curved slotted arm, *n*, a set-screw passing through the slot of arm *n* into arm *f*, the driving-wheel D, and shiftable endless belt, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

DELAY F. SUTTON.

Witnesses:
CHAUNCEY NASH,
G. B. YOUNGS.