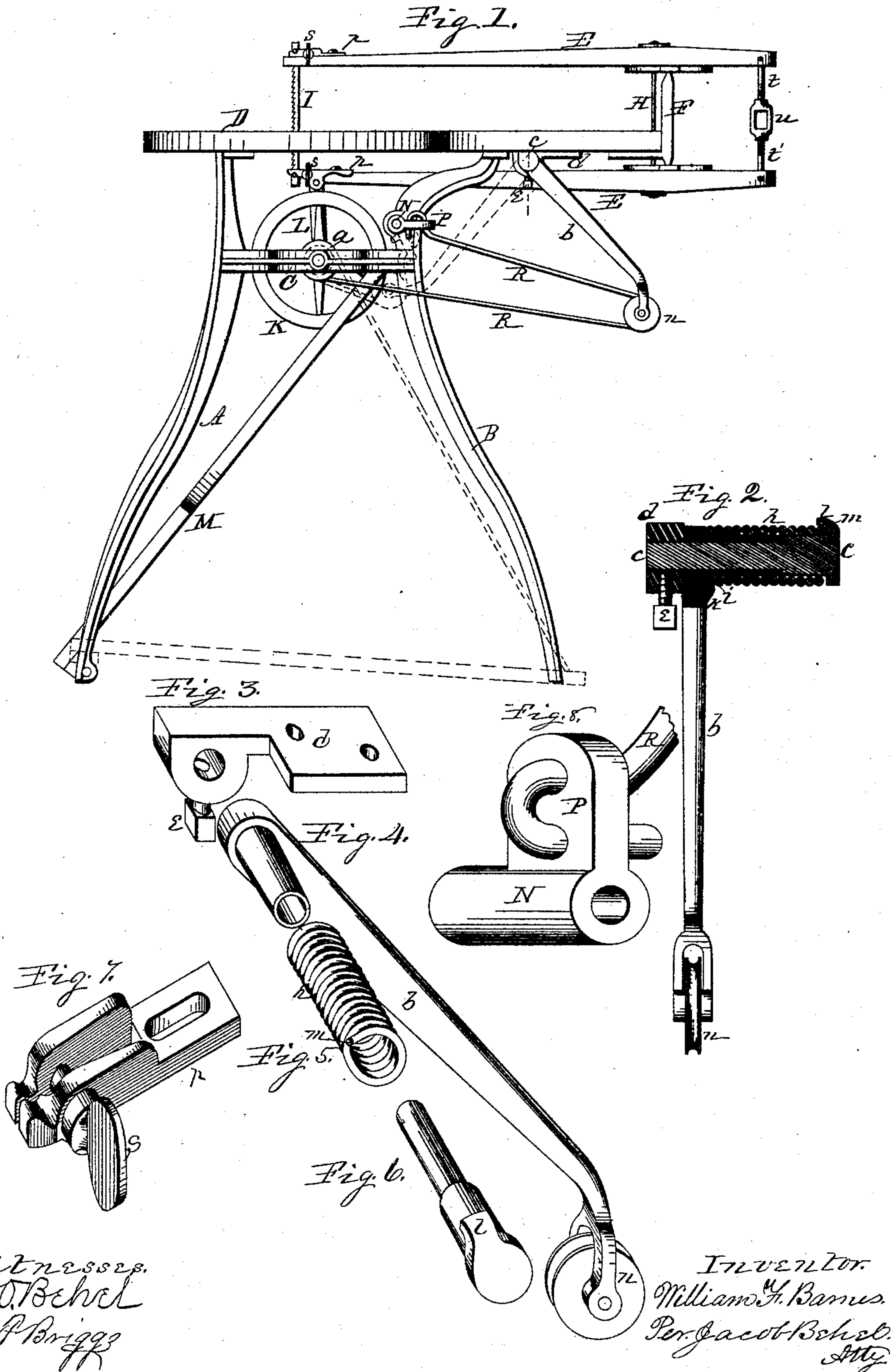


(No Model.)

W. F. BARNES.
SCROLL SAWING MACHINE.

No. 328,377.

Patented Oct. 13, 1885.



Witnesses.
A. O. Behl
C. P. Briggs

INVENTOR.
William F. Barnes.
Per Jacob Behl
Atty

UNITED STATES PATENT OFFICE.

WILLIAM F. BARNES, OF ROCKFORD, ILLINOIS, ASSIGNOR TO THE W. F. & JOHN BARNES COMPANY, OF SAME PLACE.

SCROLL-SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 328,377, dated October 13, 1885.

Application filed June 17, 1885. Serial No. 168,914. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. BARNES, a citizen of the United States, residing in the city of Rockford, in the county of Winnebago and State of Illinois, have invented new and useful Improvements in Scroll-Saws, of which the following is a specification.

This invention relates to a class of scroll-sawing machines in which the saw-blade is supported in the free ends of parallel vibrating arms, from which it receives a reciprocating movement; and its object is to improve this class of scroll-saws, to render them more efficient, and a detailed description of my improvements will be given hereinafter.

In the accompanying drawings, Figure 1 is a side elevation of a foot-power scroll-sawing machine embodying my invention. Fig. 2 is a vertical transverse section of a belt-tension arm and its support on dotted line 1, on Fig. 1. Figs. 3, 4, 5, and 6 represent isometrically the several parts of the belt-tension arm in detail. Fig. 7 is an isometrical representation of the saw-holding clamp, and Fig. 8 is an isometrical representation of the belt-buckle.

The several parts of the scroll-sawing machine represented in the figures, consisting of two like front legs, A, and a rear leg, B, connected by a transverse bar, C, forming a tripod support to the table D fixed thereon, the parallel arms E of the saw-frame, their bracket-support F, the connecting-rod H, saw I, balance-wheel K, its wrist-pin and pitman L, treadle M, and clutching mechanism connecting the driving mechanism with the shaft of the balance-wheel to impart motion to the saw, are substantially such as heretofore used in the same manner for the same purpose, and are to be found in the trade.

The clutching mechanism is provided with a sheave, a, having its periphery grooved in proper form to receive a round belt.

My improved belt-tension mechanism consists, essentially, of a spring-actuated vibrating arm, b, supported to oscillate on a spring-supporting shaft, c, made adjustable in its bracket-support d by means of a set-screw, e, to engage the shaft in its bearing-support. The bracket-support d of the vibrating tension-arm in this instance is fixed to the under face of the table, rearward of its connec-

tion with the tripod supporting-frame, but instead of the independent bracket-support it may be a portion of the frame-support produced on the rear extension of the rear leg thereof.

A spiral spring, h, surrounds the shaft-support, between the tension-arm and the free head end of the shaft. The inner end, i, of the spring h engages a lip, k, projecting from the outer face of the tension-arm, and the outer or free end of the shaft-support is provided with an overhanging lip, l, which engages the outer end, m, of the spring h, in such a manner that when the shaft-support is adjusted to wind up the spring its action will tend to carry the free end of the tension-arm rearward and upward toward the rear end of the table, and by means of the adjustable connection of the shaft with its support the lifting force of the tension-arm may be varied to any extent within the capacity of the spring to increase or lessen its lifting force.

A sheave, n, having its periphery grooved to receive a round belt, is supported to revolve on journal-bearings within the forked free end of the tension-arm.

A belt-buckle consisting of a tubular sleeve, N, having a flange, P, projecting from its side, is supported to oscillate on a stud-journal projecting from the side of the frame. The flange P is bored at proper intervals about at right angles thereto, to receive the end of the belt.

A belt, R, is fixed at one end to the free end of the treadle, from which it is passed upward over the clutch-sheave a, thence under and upward over the sheave n in the tension-arm, thence to the buckle, having its end passed through the outer hole in the flange P thereof, and then returned through the inner hole therein, which serves to hold the end securely in a manner capable of adjustment to regulate its length.

Saw-holding clamps p are fixed to the ends of the parallel saw-arms, and their forward ends are slotted to receive the saw-blade, and a notch is formed on their outer surfaces to receive a pin passed through the ends of the saw. These saw-holding clamps are provided with a thumb-screw, S, passing freely through one side thereof, and screw-threaded

in the opposite side in such a manner that the turning of the screw will force the jaws of the slotted clamp together to grip and hold the saw firmly, to prevent the saw-blade twisting in its fastenings. This clamping feature of the holder is especially servicable, in case the saw is broken in use, to prevent the parts being thrown from their fastenings.

The stretcher employed at the rear ends of the parallel saw-arms consists of three parts, the end sections, *t* and *t'*, having one end thereof pivoted in the rear end of their respective arms, and their meeting ends are screw-threaded in opposite directions, one being a right-hand and the other a left-hand screw-thread, and the center portion, *u*, of link form, having its end bars bored and screw-threaded in opposite directions to receive the right and left hand screw-threaded ends of the end sections, *t* and *t'*. This construction of the stretcher furnishes a ready means of adjusting the arms to hold the saw with proper force, and in case of the accidental breaking of the saw, in connection with the holding-rod *H*, serves to hold the vibrating arms in their relative position in place on their bracket support.

In use the depression of the treadle to the horizontal position represented in dotted lines will carry the tension-arm and belt to their dotted-line positions, and by means of the belt-connection with the sheave in its clutch-connection with the balance-wheel, and the pitman-connection of the balance wheel

with the vibrating saw-arms, will impart a reciprocating motion to the saw supported therein, and when the treadle is liberated the spring action of the tension-arm will return the parts to their solid-line position, in which return movement the clutch will be non-acting.

I claim as my invention—

1. The combination of a spring-supporting shaft made adjustable in its bearing-support, a tension-arm supported to oscillate on the spring-supporting shaft, and a spring surrounding the shaft and having one end thereof connected with the shaft and its other end connected with the tension-arm, substantially as and for the purpose set forth.

2. The combination, with a saw-supporting frame and with a treadle, of a spring-actuated tension-arm made adjustable in its connection with the frame, and a belt having a sheave-connection with the tension-arm and with the clutching mechanism, and one end of said belt fixed to the free end of the treadle and its other end to the frame, substantially as and for the purpose set forth.

3. The combination, with the frame and with the belt, of a belt-buckle having a pivotal connection with the frame, and the belt adjustable in its connection with the buckle, substantially as and for the purpose set forth.

WILLIAM F. BARNES.

Witnesses:

FRANK E. HUMESTON,
A. O. BEHEL.