

WILLIAM H. DOANE.

Improvement in Scroll-Sawing Machines.

No. 127,225.

Patented May 28, 1872.

Fig. 1.

Fig. 2.

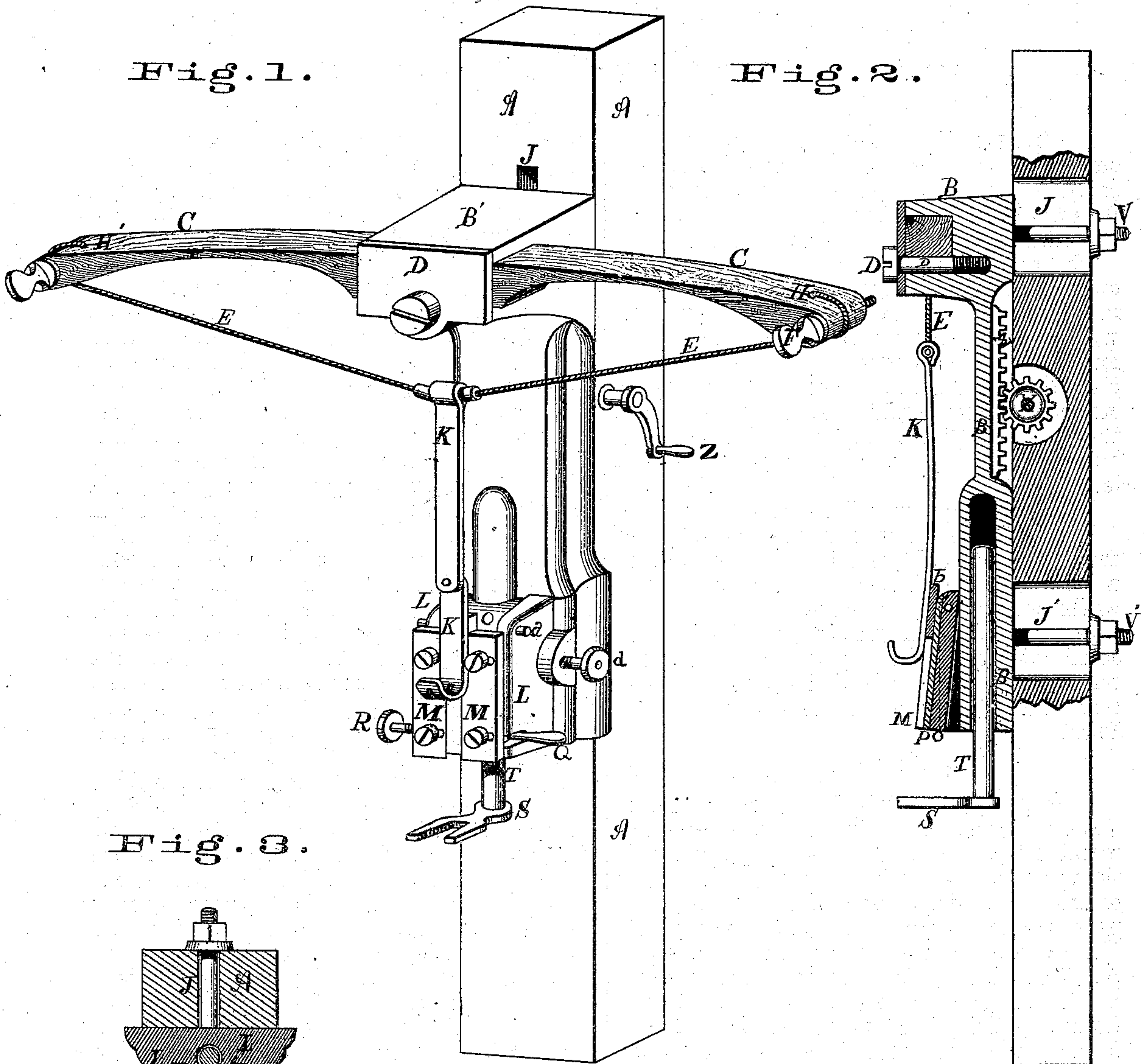
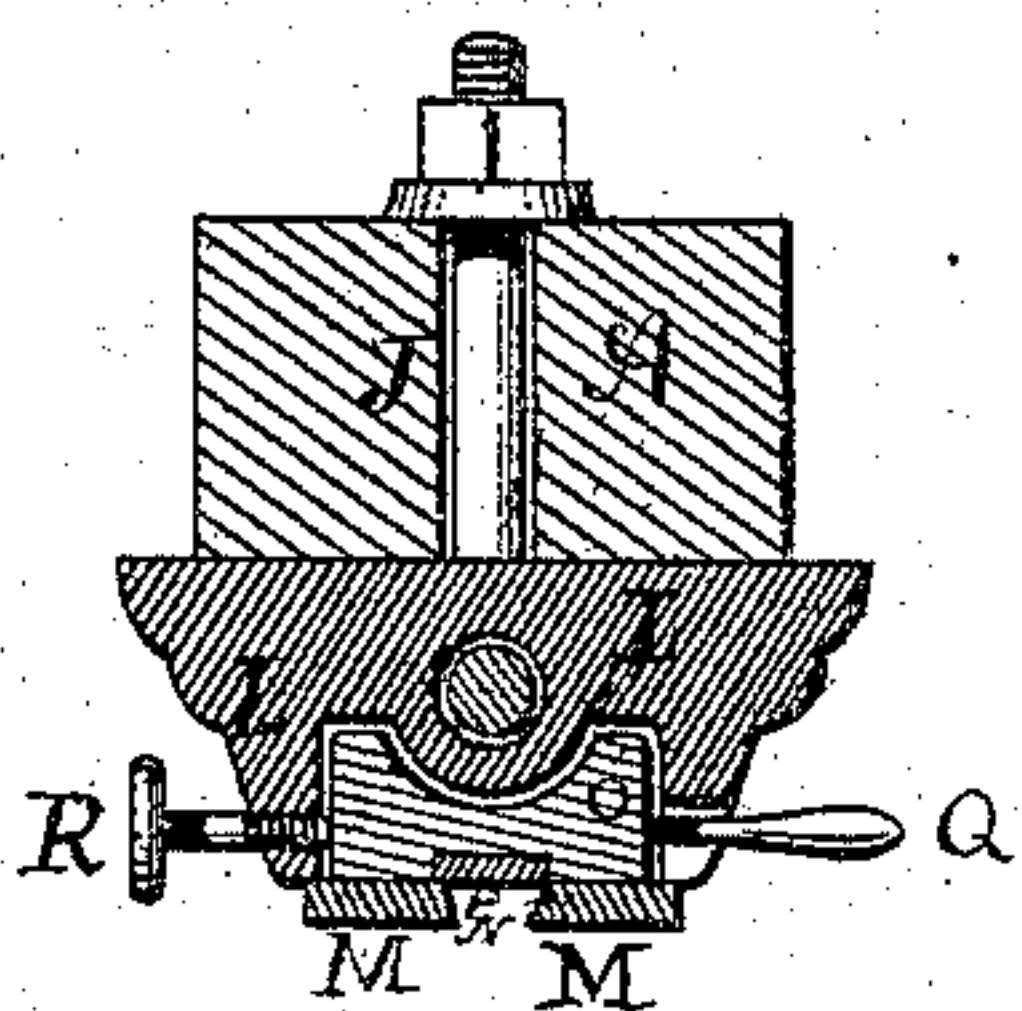


Fig. 3.



Attest.

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# UNITED STATES PATENT OFFICE.

WILLIAM H. DOANE, OF CINCINNATI, OHIO, ASSIGNOR TO J. A. FAY & COMPANY, OF SAME PLACE.

## IMPROVEMENT IN SCROLL-SAWING MACHINES.

Specification forming part of Letters Patent No. 127,225, dated May 28, 1872.

I, WILLIAM H. DOANE, of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Scroll-Sawing Machines, of which the following is a specification:

The first part of my invention consists in making the ends of the bow-spring in a new manner, and attaching thereto a suitable device, whereby the string of the bow-spring may be readily slackened or tightened at pleasure. The second part of my invention consists in a combination of devices whereby the supporting-frame is rendered capable of adjustment, so as to use saws of different length.

In the accompanying drawing—

Figure 1 is an elevation in perspective of the front, top, and one side of that portion of a scroll-saw which is above the table, and which embodies my improvements. Fig. 2 is a vertical section of the same portion of said scroll-saw from front to rear through the center of Fig. 1. Fig. 3 is a transverse plan section of Fig. 1, made at the set-screw R, of Fig. 1.

### General Description.

A is the upright which supports the machinery for the scroll-saw. B is the frame adjustable upon upright A and supporting all the upper mechanism of the saw. A shoulder or arm, B', projects forward from the upper part of B and supports the bow C at its middle. J and J' are slots through the upright A. Slot J is opposite the upper part of frame B. Slot J' is opposite the lower part of said frame. A bolt, V, connected at one end with frame B, passes through the slot J. The other end of this bolt extends beyond the back of the upright and has a screw-thread cut upon it, upon which is a nut and washer. This bolt is of such a size that it will slide up or down from the top to the bottom of slot J without obstruction. V', a bolt similar to bolt V, passes through slot J' and has a nut and washer on its rear end. Bolt V' slides up and down in slot J' as bolt V does in slot J. The middle of the bow-springs fits into a recess in the front of shoulder D and is held there by a plate, D, and screw D'. The ends of the bow C are enlarged and in each of them is a longi-

tudinal vertical slit, H. Transversely through each of said ends a screw, F, passes. Each screw enables the slit through which it crosses to be opened or closed at will. E is the bow-cord or string passing from the bottom side of one end of the bow up through the slit H, over and down around the screw F, then through the eyelet of K across to the other end of the bow, where at H' said cord is similarly secured. O is the saw-guide fitting between two flanges, L L, projecting from the front of frame B and pivoted on the upper front corner of said flanges at a. Q is a handle attached to the lower part of the side of O for adjusting said guide and giving it a proper inclined position. R is a set-screw in one of the flanges L, for the purpose of holding the guide at any desired inclined position. P is a piece of steel or hard metal set vertically into the middle of the front of the guide, and affording a proper bearing for the T-head b. M M are guides, one on each side of the T-head and over the front edges of these sides, thus holding down said T-head and guiding it by their inwardly enlarging beveled sides. T is a shaft sliding up into the bottom of frame B and provided at its lower end with a foot, S, for holding down the timber while being sawed. d is a set-screw for holding the shaft T and foot S at any required height. N is a ratchet on the middle of the rear side of the adjustable-frame B. X is a pinion pivoted within the upright A and toothed into the ratchet N. Z is a lever on the outside of the upright A for turning the pinion X. K is a rod jointed if desired at its middle, as shown in Fig. 1. K, near its lower end, is attached to the front of T-head b. The lower end of K curves out from the T-head in a segment of a circle and is pierced with a longitudinal slot for the entrance of the head of the saw. In the upper end of K is an eye through which passes the cord of the bow-spring. This cord is usually covered with leather or buckskin or the like within the eye, to prevent its abrasion by said eye.

### Mode of Operation.

The mode in which a machine for scroll-sawing, having my aforesaid improvements applied to it, operates, is as follows: The head of



a scroll-saw of the proper dimensions is passed up through the slot in the lower end of K, and a bolt or key is then passed through the head of said saw above the slot and at right angles to it. The said saw is then properly attached below. The office of the bow is to draw up the saw after each downward stroke. If the tension of the bow-cord E is too great or too little the difficulty can be remedied by unscrewing the screw F and letting out or tightening up the cord, by passing it up or down through slit H and then tightening the screws F F. To give a proper rake or inclination to the cord take hold of lever Q and draw out the bottom of the guide O until the requisite inclination of the guide is obtained. The set-screw R is then tightened and thereby the guide is held in the desired position. The T-head, usually of steel, slides upon the steel-bearing P; this bearing is very durable. When worn out it can be easily replaced by another, it being held in position by the guides M M. Whenever the saw breaks off near either end, the saw is not useless. It can be used again by boring a new hole in it near where it was broken off, and then resetting it in the machine. It will be just as much shorter, however, as the short piece broken off detracts from the original length of the saw.

The adjustment of the connecting-rod K and the whole of the upper machinery to the shortened saw is accomplished by unscrewing the nuts upon the bolts V and V' and turning the lever Z and pinion X so as to depress sufficiently the frame B. This adjustment being made the screws V and V' are again tightened. In tightening they draw the frame B hard against upright A; said upright is thus grasped firmly in front by frame B and behind by said nuts, and the said frame B is thus secured in position. The broken saw is again ready for operation.

*Claims.*

What I claim as new, is—

1. A bow-spring for raising a scroll-saw when said spring is provided with slotted end or ends in combination with a screw or screws, substantially as specified.

2. In combination with the slotted upright A, provided with pinion X, the adjustable frame B, with bolts V V' and rack N, substantially as and for the purposes mentioned.

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Witnesses:

C. G. HALE,  
P. M. SHUEY.