

G. H. TRUXELL.
 SCROLL-SAWING MACHINE.

No. 189,527.

Patented April 10, 1877.

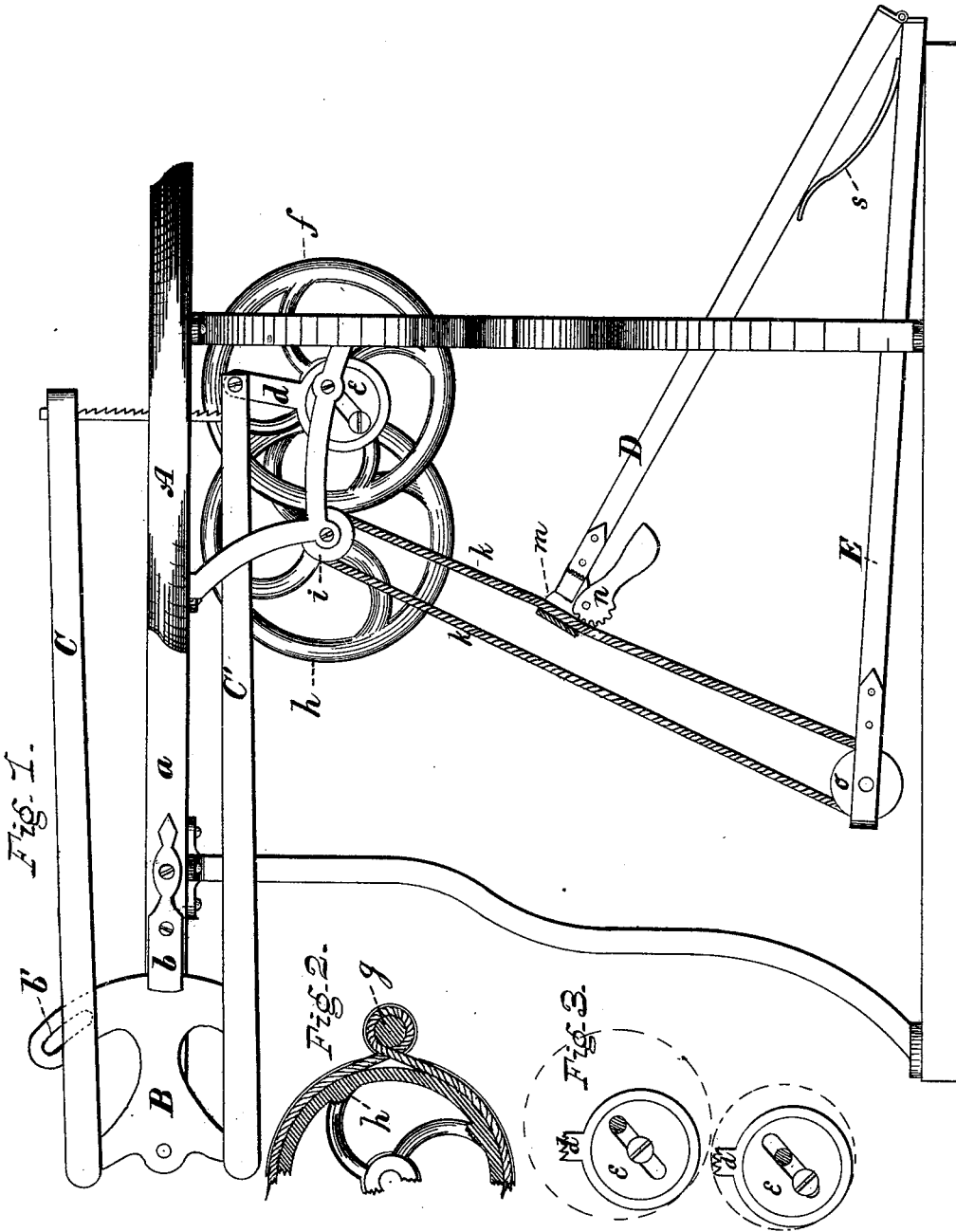


Fig. 1.

Fig. 2.

Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE

GEORGE H. TRUXELL, OF GREENSBURG, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF HIS RIGHT TO WILLIAM TRUXELL, OF SAME PLACE.

IMPROVEMENT IN SCROLL-SAWING MACHINES.

Specification forming part of Letters Patent No. **189,527**, dated April 10, 1877; application filed
August 16, 1876.

To all whom it may concern:

Be it known that I, GEORGE H. TRUXELL, of Greensburg, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Scroll-Sawing Machines; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a side elevation of the complete machine, the clutch on the treadle being in part section. Fig. 2 is a partial section of wheels *h* and *g*. Fig. 3 is a detail, showing the eccentric *e* set for two different lengths of stroke, the path of each shown in dotted lines.

This invention relates to scroll-sawing machines of that class which are operated by a treadle; and consists in the construction of the treadle, as hereinafter described, whereby no loss of motion or power occurs in the return of the treadle; and consists, further, in the bracket or device for giving tension to the saw, or adapting the arms to various lengths of blade; and further consists in the combination, with the saw-frame, of the eccentric, which I render adjustable, and thereby vary the length of stroke to suit different requirements.

A is the table, which has a rear extension, *a*, at whose end is pivoted a metal brace, B, held to a vertical plane by the guide *b*, attached to extension *a*. The brace B has upward and downward projections, as shown in the illustrations. To these are respectively attached the saw-arms O O', the upper arm O being adjustable with relation to the lower by means of the slot *b'* in the brace B, and a set-screw on the arm. This allows the two arms to approach or recede for the purposes of tension, or to suit various blades. At the ends of these arms the saw is held vertically. They are given motion by the pitman or eccentric rod *d*, pivoted to the arm O' at its end, and operated by an eccentric, *e*, on the main shaft. This eccentric is slotted diametrically, and is held to the power-wheel *f* by a set-screw passing through the slot. This causes it to be ad-

justable in relation to its distance from the center of the wheel *f*. By this means the stroke of pitman *d* may be lengthened or shortened at will. On the main shaft, on the other side of wheel *f*, is a pulley, *g*, rigidly keyed on said shaft. It is grooved on its periphery, and has also plain edges. Of similar form, but much larger, is the fly-wheel *h* on the counter-shaft. These two are geared together by a cord, which passes around both, and is crossed between. The edges of the wheel and pulley being in rolling contact, neither can move under any circumstances, and hence there is no strain on either shaft or counter-shaft. On the counter-shaft is also a small pulley, *i*, which carries the cord or belt *k* of the treadle. The treadle is made in two parts, hinged or jointed at their outer extremity, as seen. They are forced apart by a spring, *s*, of any kind, placed between them. The upper part D of the treadle has a clutch mechanism at the inner extremity. It is provided with a thimble or eye, *m*, through which the cord *k* passes one way, and to it is pivoted a gravity-cam, *n*, which allows the cord free passage when the treadle is rising, but catches it firmly when the treadle is depressed. The lower part E of the treadle is provided, as shown, with a pulley, *o*, around which the cord *k* passes.

Thus constructed, the normal position of the two-part treadle is as seen in Fig. 1. The cam *n* being by gravity tightened against the cord when the treadle is depressed, the spring *s* produces tension of cord *k*, and the clutch on D drags the cord downwardly. This turns the pulley *i*, which then, through the various wheels and connections, gives motion to the saw-blade. When the part D of the treadle is depressed to its limit the lower end of cam *n* strikes the part E, and, turning on its pivot, releases the cord, and instantly the part D flies back to its normal position without stopping the cord *k*, or in any way interfering with it.

This is a very important improvement, because no time is lost in bringing the treadle back to working position, and hence the cessation of power is but momentary, so short that the fly-wheel's reserve of power easily

bridges over the interval without decreasing the velocity of the blade. Hence, also, it prevents the loss of power by friction in lifting the treadle.

Constructed thus, all undue strain is obviated, the saw runs uniformly, and, with the exception of the inappreciable lapses in the return of the treadle to position, the direct force is constant of application, and, therefore, there is little opportunity for the blade to stick for want of power. This often happens in the common treadle, as well as in treadles operating a single cord on a spring recovery-pulley, because so much time is lost by return of treadle.

The adjustability of the arms and the eccentric admits of a variable length of saw or of stroke, while the former also supplies the necessary tension.

Having thus described my invention, what I claim as new is as follows:

1. The pivoted brace B, slotted as described, in combination with the arm or arms of the saw, substantially as specified.

2. In combination with brace B and extension *a*, the guide-piece *b*, substantially as described.

3. In combination with wheel *f*, rod *d*, and saw-frame C C', &c., an adjustable eccentric, *e*, to regulate the length of stroke of the pitman, substantially as specified.

4. The combination of a continuous cord or band, *k*, a clutch operating substantially as described, pulleys *i* and *o*, and a two-part treadle sprung apart by a spring, *s*, substantially as set forth.

5. The two-part treadle, the upper carrying a gravity friction-clutch, and the lower a pulley or band-wheel, and held apart normally by a spring, *s*, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of August, 1876.

GEORGE H. TRUXELL.

Witnesses:

THOS. J. MCTIGHE,
SAML. ANDEERSON.