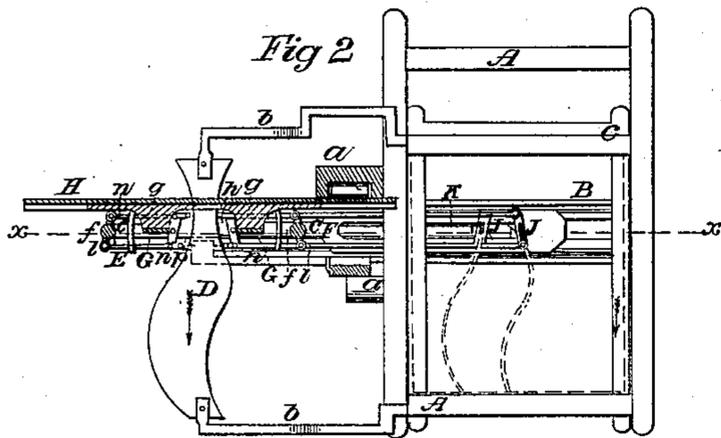
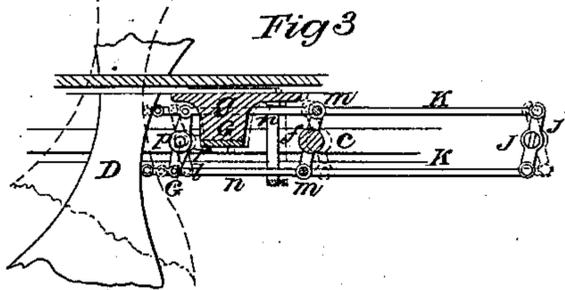
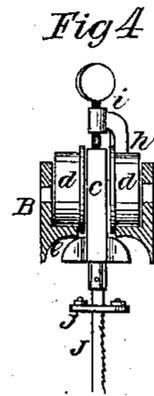
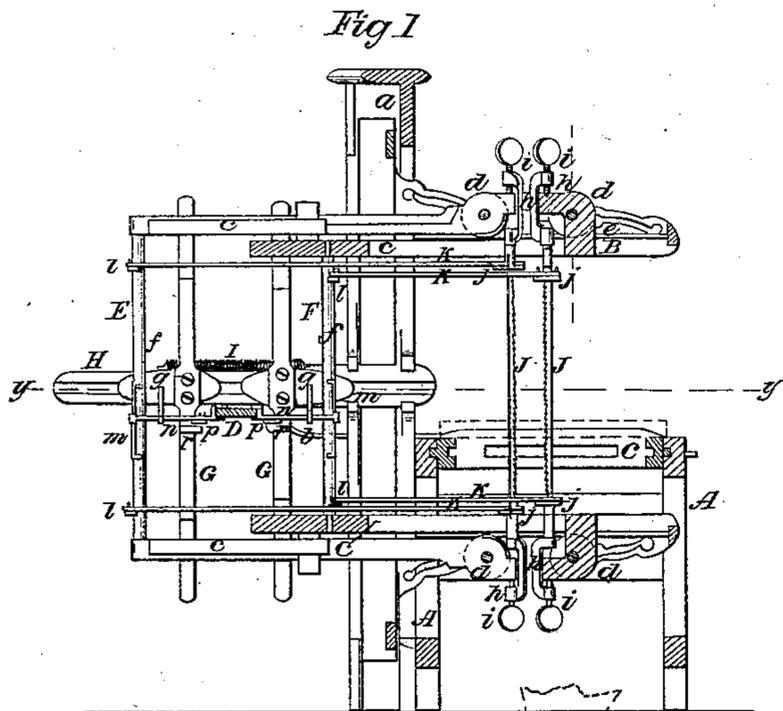


*S. Warner,*  
*Scroll Sawing Machine,*  
*No. 13,055, Patented June 12, 1855.*



# UNITED STATES PATENT OFFICE.

SHELDON WARNER, OF ENFIELD, MASSACHUSETTS.

## CURVILINEAR-SAWING MACHINE.

Specification of Letters Patent No. 13,055, dated June 12, 1855.

*To all whom it may concern:*

Be it known that I, SHELDON WARNER, of Enfield, in the county of Hampshire and State of Massachusetts, have invented a new and Improved Machine for Sawing Scrolls or Curved Articles by Means of Patterns; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a vertical section of my improved machine. *x, x*, Fig. 2, shows the plane of section. Fig. 2, is a horizontal section of ditto. *y, y*, Fig. 1, shows the plane of section. Fig. 3, is an enlarged detached horizontal section of the parts by which one of the saws is operated. *y, y*, Fig. 1, shows the plane of section. Fig. 4, is a detached view of the device for straining and securing the saws to the sash or frame.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a new and improved machine for sawing scrolls or curved articles by means of patterns, and consists in the peculiar means employed by which the saws are turned by the pattern and their cutting edges presented properly to the stuff so as to cut in the required direction.

The invention also consists in the peculiar mode of straining and securing the saws in the sash or frame as will be hereafter shown and described.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents the frame of the machine, constructed in any proper manner to support the working parts.

B represents a saw frame or sash which works in suitable guides (*a*) (*a*) attached vertically to the frame A. This saw frame or sash has a vertical reciprocating motion given it in any proper manner.

C, represents a carriage which works horizontally in suitable guides on the upper part of the frame A. One side of this carriage is provided with arms, (*b*) (*b*) to the outer ends of which a pattern D is secured of the shape or form corresponding to that in which the stuff is to be sawed. The pattern D is secured in a horizontal position as shown in Figs. 2 and 3.

In the saw frame or sash B, there are placed two lateral vibrating frames E, F.

These frames are formed of top and bottom strips (*e*) (*e*) each of which have friction rollers (*d*) at one end said rollers working on the top and bottom cross pieces (*e*) of the saw frame or sash B, see Figs. 1 and 4. The opposite ends of the strips (*e*) are connected by vertical rods (*f*) (*f*) one to each frame E, F, the rods (*f*) (*f*) being allowed to turn in the strips (*e*).

G, G, are flat vertical bars secured to the strips (*e*) between pins or guides so that said bars may move laterally with the frames E, F, and at the same time allow said frames to move up and down while they remain stationary, or at least do not move vertically with said frames. The bars G, G, have blocks (*g*) attached to them at about their centers, said blocks working in a groove in a horizontal bar H, attached to the frame A, see Figs. 1 and 2. The two bars G, G, are connected by a spiral spring I, shown in Fig. 1.

J, J, are saws of the usual construction and form employed in scroll sawing. There is a saw attached to each of the frames E, F, and in the following manner: The upper and lower end of each saw is secured to a bow (*h*) see Figs. 1 and 4. Each bow has a screw (*i*) passing through its outer end and the points or ends of the screw bear upon the ends of the strips (*e*) of the frames E, F. By turning the screws (*i*) therefore the saws are strained and secured in the frames E, F, and the saws are also allowed to turn on the points of the screws as the bows (*h*) will clear the ends of the strips (*e*) see Fig. 1.

The pattern D, it will be seen is placed between the two flat bars G, G, and the stuff to be sawed, shown in red, is placed upon the carriage C.

To the upper and lower ends of the saws J, J, there are secured short transverse bars (*j*), to the ends of which rods (*k*) are attached, at one end, the opposite ends of the rods being attached to transverse bars (*l*) on the vertical rods (*f*) see Figs. 1, 2 and 3. To the centers of the vertical rods (*f*) there are attached by loops or staples (*m*), rods (*n*) two to each rod (*f*) and at opposite sides. The outer ends of these rods (*n*) are attached to the ends of levers (*p*), which work on fulcra or projections (*r*) attached to the vertical bars G, G, and the exterior ends of the rods (*n*) bear against the sides or edges of the pattern D.

The operation will readily be understood. A reciprocating motion is given the saw frame or sash B, and the carriage C, is moved by hand or otherwise, the stuff being  
 5 placed upon it. The pattern D of course moves with the carriage C, and as the rods (n) bear against its sides or edges, the rods (f) (f) and saws J J, will be turned so that their teeth or cutting edges will be in the  
 10 proper direction and cut the stuff, the precise form of the pattern. The frames E, F, are also moved by the pattern D in one direction, the return movement being given by the spring I. In consequence of the saw being  
 15 strained by the bows (h) and screws (i) as shown the saws are allowed to turn easily and at the same time are securely attached to their frames E, F.

The above invention is extremely simple,  
 20 and works well in practice; either one or two saws may be used, but when both edges of the pattern are curved two saws will be necessary or essential as the stuff would be sawed in one operation.

25 The machine is applicable for sawing all sorts of scroll, or curved work, such as chair stuffs etc. The saws may be turned at an angle of 45° and saw well. The feed motion of the carriage is retarded of course in pro-

portion to the angle at which the saws are 30 working. The saws cut very smooth, and after finishing is not required.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is,

35 1. Placing the saws J, J, in frames E, F, which are allowed to move laterally in the saw frame or sash B, and having said saws so attached to the frames E, F, as to be  
 40 allowed to turn therein, said saws being turned by means of the rods (k) (n) attached to transverse bars (l) on the vertical rods (f) the rods (f) being turned by the rods (n) and levers (p), the outer ends of the rods bearing against the pattern D, and  
 45 operated as said pattern moves as herein shown and described.

2. I claim straining and attaching the saws J, J, to the frames E, F, by having  
 50 bows (h) attached to the ends of the saws and screws (i) passing through them, the ends of said screws resting upon the top and bottom strips (c) of the frames E, F, as herein described.

SHELDON WARNER.

Witnesses:

EBEN H. ROCKWOOD,  
 CHARLES RICHARD.