F. W. Harris,

Scroll Sawing Machine.

No. 4,211. Patented Sep. 27, 1845

Fig. 1

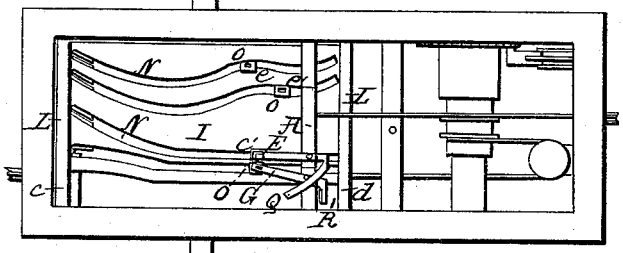


Fig. 2

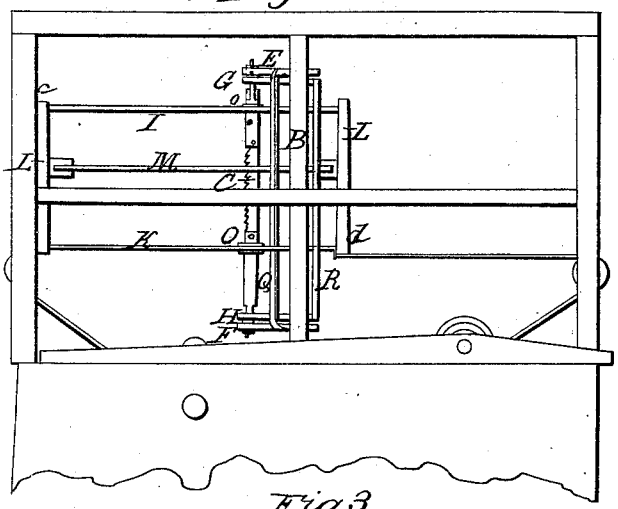
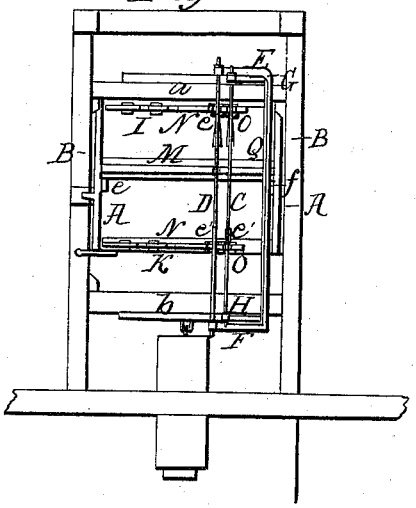


Fig. 3



UNITED STATES PATENT OFFICE.

FREDERICK W. HARRIS, OF LANCASTER, MASSACHUSETTS.

MACHINERY FOR SAWING IRREGULAR SHAPES.

Specification of Letters Patent No. 4,211, dated September 27, 1845.

To all whom it may concern:

Be it known that I, FREDERICK W. HARRIS, of Lancaster, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Machinery for Sawing Timbers into Irregular Shapes Suitable for the Manufacture of Gun-Stocks, Chair-Backs, or Various other Articles; and I do hereby declare that the nature of my improvement and the manner in which the same is constructed and operates are fully set forth and represented in the following description and accompanying drawings, letters, figures, and references thereof.

Of the drawings aforesaid, Figure 1, represents a top view of my improved sawing machine, Fig. 2 is a side elevation, Fig. 3 is a vertical transverse section, taken through the axis of the driving shaft, and exhibiting the saw frame and various other parts in the vicinity thereof.

A, Fig. 3, denotes the saw frame, which consists of a rectangular frame (similar to others in common use in saw mills and machines) which is arranged between upright posts B, B, and properly guided by them, so as to play or move freely up and down.

C and D, (Figs. 2, 3) are two saws, each of whose upper and lower ends is sustained by and turns horizontally in one of four arms E and F, of one saw and G and H of the other, each of the said arms being extended from and jointed to either the top or bottom edge of the frame A, as seen in the drawings. Thus, the top edge of the top rail of the frame A, has two arms E and G, extending from it, and jointed to it, so as to move freely in horizontal directions. The bottom edge of the bottom rail of the said frame has two similar arms E and H applied to it, and extending from it in a similar manner.

Between the top and bottom rails, *a*, *b*, of the frame A, two pattern plates I, K are arranged, as seen in the drawings, they being placed parallel to one another, and supported upon a frame L, composed of two vertical end frames *c*, *d*, united by horizontal ties *e*, *f*. The said frame L, is calculated to carry and sustain the planks, timbers or boards to be sawed, and which are arranged midway and horizontally, between the pattern plates, and are supported in position by proper contrivances connected to the frame.

In the drawings, M represents a board placed in its correct position, with regard to the saws. The frame L is to have suitable mechanism, applied to it, which will impart to it, when the saws are moved up and down, a motion horizontally, in a direction proper to cause the saws to cut through the board. It may also have other mechanism, connected with it, and acting upon it, for the purpose of reversing its motion when the sawing operation has been performed. Much of the said mechanism for moving the frame, or carriage L, is exhibited in the drawings, but, as there is nothing substantially new in it, either in its arrangement, application or mode of operation, I do not deem a further description of it, as essential to a full comprehension of my improvement.

Each of the pattern plates I, K, has a curved slot or passage N, cut through it, the one slot of the one plate, being exactly like the other, in form, and placed directly over it. Each slot receives within it a small block *o*, through which one of the saws is made to pass, and move freely. The block is supported within the groove, by four suitable flanches *e e*, which project from it, and rest upon the pattern plate, two of the said flanches resting upon the upper side of the pattern plate, and the other two against the under side thereof. Each of the saws, thus travels vertically through two of the blocks, which, in their turn, move longitudinally in two of the guiding slots.

From the above it will be seen that the slots of the pattern plates, determine the path of the saw; that is to say, they cause it to move laterally (while the timber or board is being moved longitudinally), so as to cut through the board, in a curve corresponding with, or being similar to that of the two guiding slots. For the purpose of causing each two arms E and G, and F and H, to move simultaneously and to render them stiff and unyielding to vertical forces tending to displace them, or to make them act irregularly, I connect them together in rear of their centers of motion, by one of two bent bars Q R, as seen in the drawings.

Although I have made mention of two saws, and exhibited them in the drawings, I wish it to be understood that I do not intend to limit myself to such a number of them, as, but one, or any other number may be employed, according to circumstances; my improvement being applicable to each saw, and consisting in the manner of guiding it. I employ two saws, for the purpose of sawing

from a piece of board, and at one operation, a chair post, gun stock or other article.

Having thus described my invention, I shall claim—

The above mode of guiding the saws, the same being effected by the curved slots of the pattern plates, and blocks through which the saw works, in combination with vibrating arms applied to the saw frame and saw, as set forth, the whole being substantially as hereinbefore explained.

In testimony whereof, I have hereto set my signature this second day of August A. D. 1845.

FREDERICK W. HARRIS.

Witnesses:

NATHL. RAND,

JOHN T. DAME.