H. S. Trooman,

Cutting Veneers.

No. 20,184. Patented May 4, 1858.

Fig. 2.

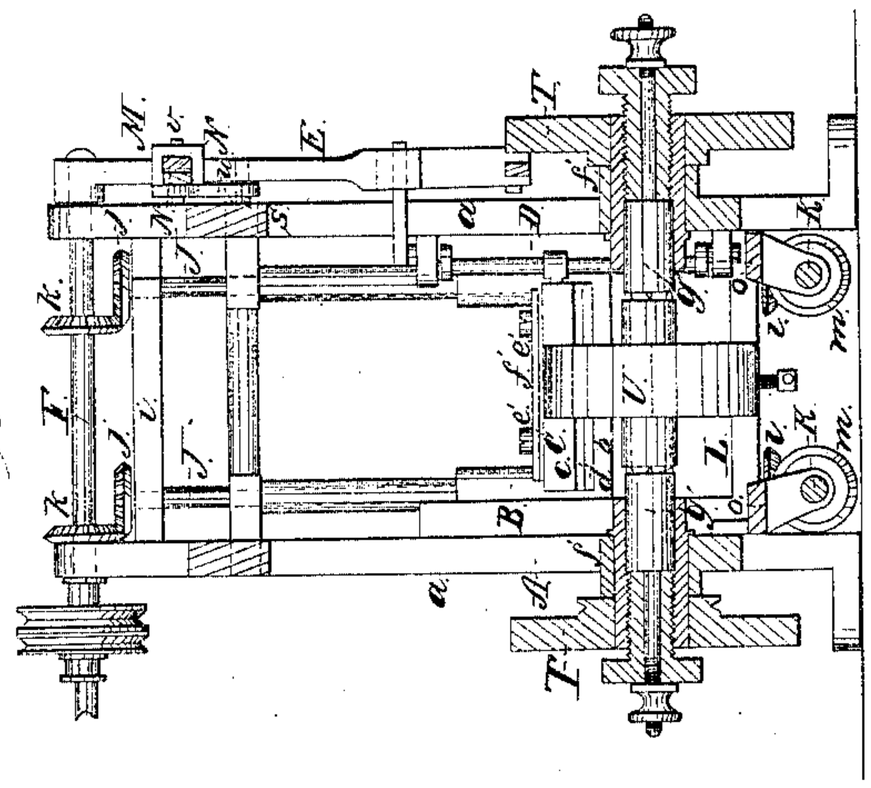


Fig. 1.

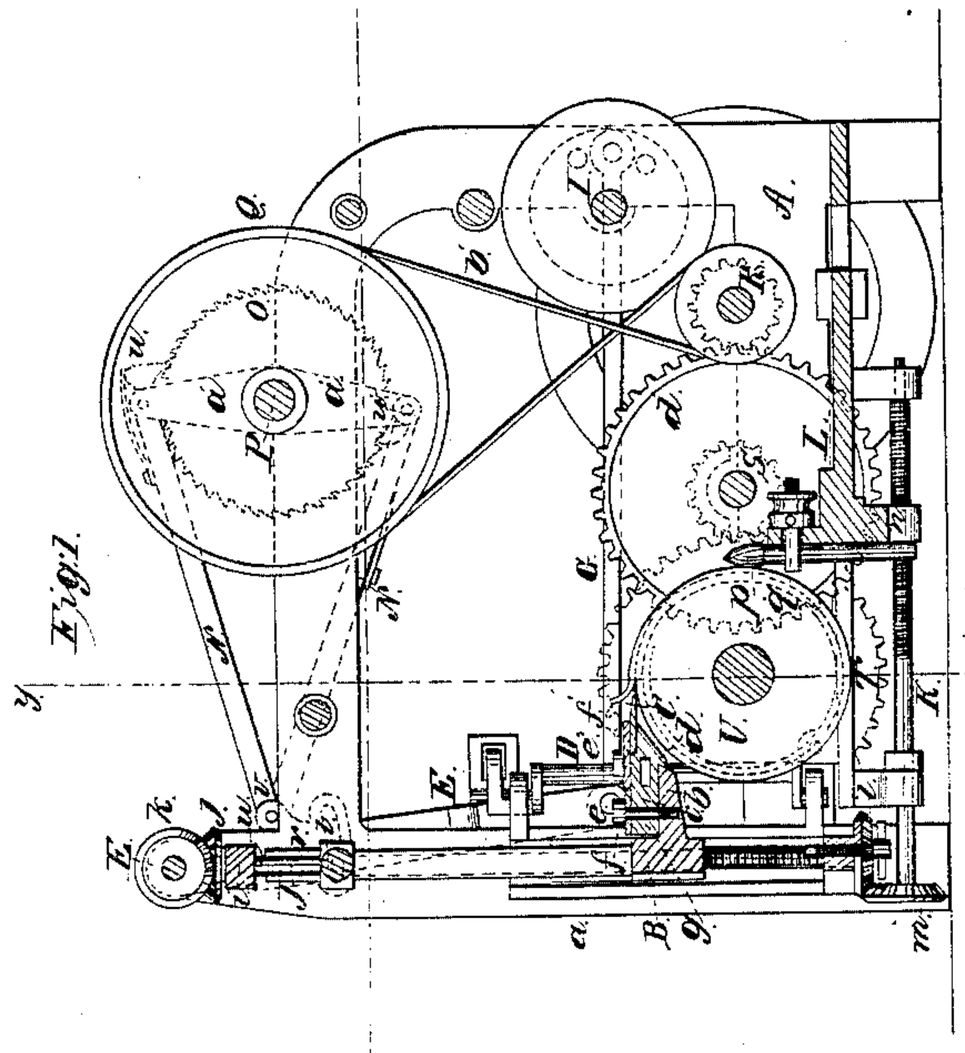
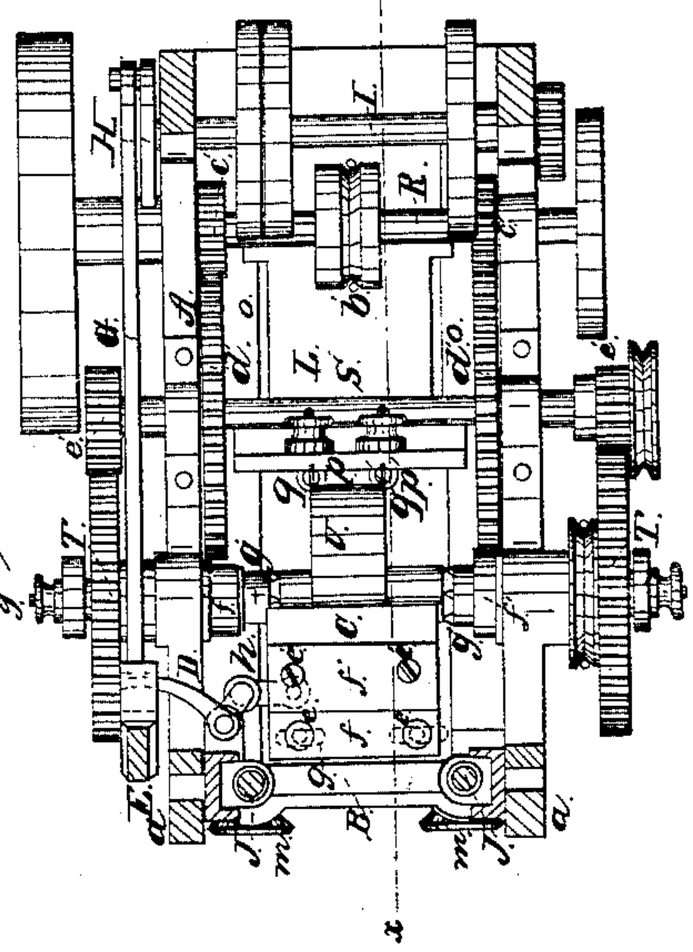


Fig. 3.



UNITED STATES PATENT OFFICE.

H. S. VROOMAN, OF NEW YORK, N. Y., ASSIGNOR TO HENRY ALBRO, OF COVINGTON, KENTUCKY.

SAWING-MACHINE.

Specification of Letters Patent No. 20,184, dated May 4, 1858.

To all whom it may concern:

Be it known that I, H. S. VROOMAN, of the city, county, and State of New York, have invented a new and Improved Machine for Sawing Timber or Logs Spirally or in Volute Form in One Continuous Piece from the Periphery to the Center; 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 side sectional elevation of my improvement taken in the line *x*, *x*, Fig. 3. Fig. 2, is a transverse vertical section of ditto taken in the line *y*, *y*, Fig. 1. Fig. 3, is a horizontal section of ditto, taken in the line *z*, *z*.

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

This invention consists in a peculiar arrangement of means for operating a reciprocating knife or saw. And also in giving the log or stuff which is centered between arbors a gradually progressve rotating speed so as to compensate for its gradually diminishing diameter while being sawed and thereby allow the knife or saw to cut the log or stuff in spiral or volute form from periphery to center or nearly to the center in a single or continuous piece.

The invention is designed for sawing thin "stuff" such as is used for the backs of mirrors, boxes, veneers and other purposes.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents the framing of the machine, which may be constructed in any proper way to support the working parts.

B, is a sliding frame which is fitted in proper guides between the two uprights *a*, *a*, at one end of the framing A. The frame B, has a horizontal bed *b*, attached to its inner side and a plate or stock *c*, is fitted on said bed, the stock being secured on the bed by a dovetail projection *d*, which fits over the edge of the bed *b*, and by screws *e*, which pass through a plate *f*, and through oblong slots *g*, in the stock into the bed *b*. To the front end of the stock *c*, a knife or saw C, is attached, by screws *e'*, which pass through a plate *f'*. The stock *c*, is allowed to slide horizontally on the bed *b*, and it is connected at one end by an arm *h*, to a crank D, which is connected with and receives its motion from a lever E, the upper end of which is fitted loosely on a shaft F, on the upper ends of the uprights *a*, *a*. The lower end of the lever E, has a connecting rod G, attached to it, and the opposite end of this rod is attached to a crank pulley H, on the driving shaft I.

J, J, are two vertical screw rods which pass through the frame B, and work in internal screw threads therein. The upper ends of the rods J, J, pass through a crosstie *i*, at the upper ends of the uprights *a*, *a*, and have each a bevel wheel *j*, placed on them. The wheels *j*, gear into corresponding wheels *k*, *k*, on the shaft F. The lower ends of the screw rods J, J, have each a bevel wheel *l*, placed on them, and these wheels gear into corresponding wheels *m*, *m*, placed on horizontal screw shafts K, K, which are fitted in suitable bearings at the lower part of the framing A. The shafts K, K, pass through nuts *n*, attached to the under side of a carriage L, which is fitted between guides *o*, *o*, in the lower part of the framing. To one end of the carriage L, two cutters *p*, *p*, are attached. These cutters are simply knives secured to the carriage by clamps *q*, arranged in any proper way.

One end of the upper cross piece of the frame B, extends through a slot *r*, in one of the uprights *a*, see Fig. 1. This end of the crosspiece has a pin *s*, fitted in it longitudinally see Fig. 2, and this pin fits in a curved slot *t*, made in the lower part of a plate *u*, which is attached to a collar M, said collar being fitted loosely on the lever E.

To the collar M two arms N, N, are attached by a pivot *v*. To the outer ends of the arms N, pawls *w*, *w'*, are attached, one to each. These pawls are made to catch into a ratchet O, one at its upper and the other at its lower part, the pawls acting alternately on the ratchet and so arranged as to give it a continuous rotary motion. The ends of the arms N, wherein the pawls *w*, *w'*, are attached are pivoted to bars *a'*, which are fitted loosely on a shaft P, on which the ratchet O, is placed.

On the shaft P, a pulley Q, is placed, and R, is a shaft in the lower part of the framing which is driven from the shaft P, by a belt *b'*. On the shaft R, near each end a pinion *c'*, is placed, and these pinions gear

into wheels d', on a shaft S. This shaft S, has a pinion e', on each end of it, and these pinions e', gear into wheels T, which are placed on arbors f', at each side of the framing, said arbors having cutters g', fitted within them and between which the log or "bolt" to be sawed is centered, similar to the way in which articles are centered in turning lathes.

The shaft F, is driven from one of the arbors f', by means of a belt.

The operation is as follows: The bolt or log U, is properly secured between the centers g', and motion is given the shaft I, by any proper means. The lever E, is oscillated from shaft I, by means of the connecting rod G, and crank pulley H. A reciprocating motion is given the knife or saw C, from the lever E, by means of the crank D, and a continuous rotary motion is given the ratchet O, and shaft P, by means of the pawls m, m', attached to the arms N, N. The bolt U, is rotated from the lever E, through the medium of the arms N, N, with their pawls w, w', attached, the ratchet O, belt b', and gearing c', d', e', T, previously described, and the shaft F, as before stated is rotated from one of the arbors f', the rods J, J, are rotated from shaft E, and the shafts K, K, are rotated from the rods J, J. As the knife or saw C, is operated or as it is moved laterally it is fed gradually down by means of the rods J, J, and the bolt or log U, is rotated with a gradually increasing speed in consequence of the collar M, being gradually lowered on the lever E, as the frame B, and knife or saw C, descends. The bolt U, therefore will be cut or sawed in spiral or volute form from its periphery toward its center and as the speed of the bolt is increased as its diameter decreases the bolt will be regularly fed to the knife or saw, for the periphery of the bolt will have a constant speed, and as the knife or saw is fed regularly downward toward the bolt, the latter will be sawed in a scroll or volute of equal thickness throughout, and the volute or scroll may be cut even at its edges or divided into any number of parts by the cutters p, which are fed to their work by the rotation of the screw rods K.

I do not claim broadly the sawing of logs or bolts in volute form for this has been previously done; but, having thus described my invention,

What I do claim as new and desire to secure by Letters Patent, is,

1. The traveling or sliding collar M, on lever E, as connected with the knife or saw frame B, the pawl arms N, N, in combination with the reciprocating connecting rod G, the vibrating lever E, the pawls w, w', and the ratchet wheel O, whereby an increasing rotary speed, of the log or bolt U, is obtained from the traveling collar M, passing down to a wider sweep of lever E, as set forth, the power being transmitted from the ratchet shaft P, to the bolt U, as shown, or by any other equivalent device, for the purpose described.

2. The cutters p, attached to the carriage L, operated automatically by, and in combination with the vertical screws J, for the purpose set forth.

3. The lateral moving knife plate or stock c, crank D, operated by and in combination with the vibrating lever E, for the purpose shown.

4. The combination of the knife C, cutters p, and the feed movement of the bolt or log U, when the whole are arranged to operate as, and for the purpose set forth.

HENRY S. VROOMAN.

Witnesses:
W. TUSCH,
W. HAAFF.