F. T. & J. O. STEVENS.

MACHINE FOR SAWING AND BORING WOODEN BLOCKS.

No. 185,705. Patented Dec. 26, 1876.

Fig. 1

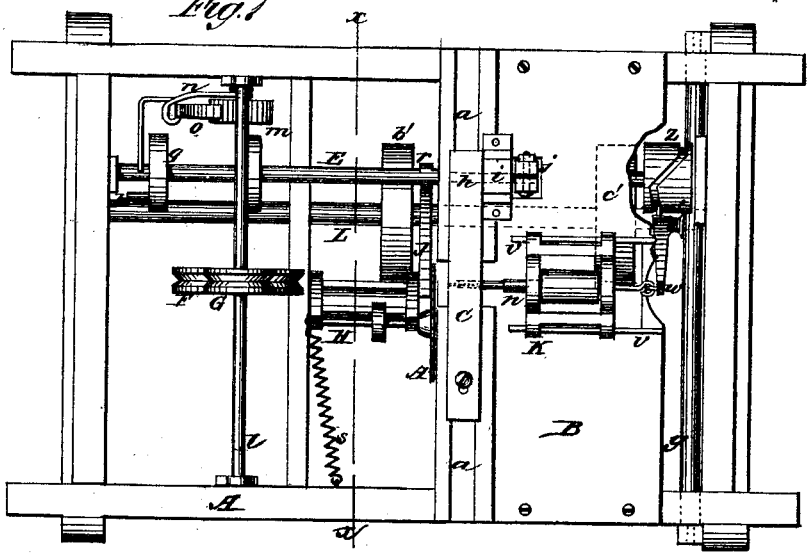


Fig. 2.

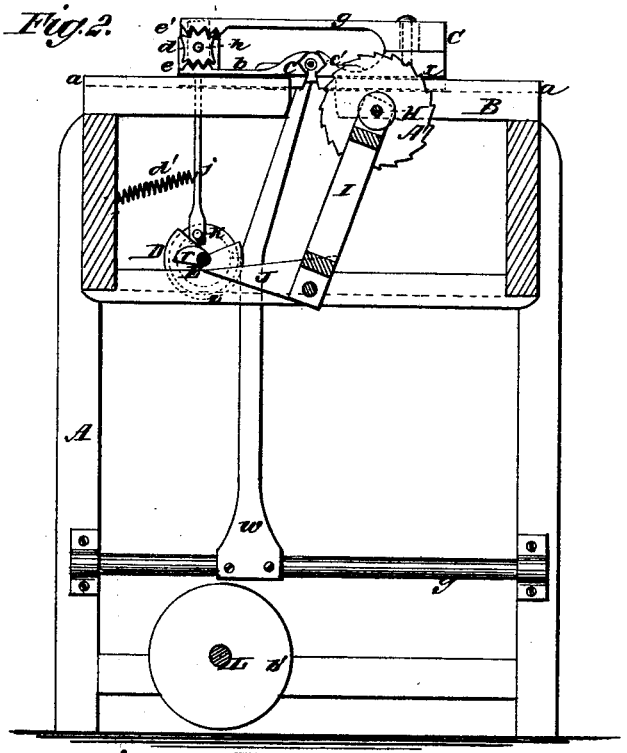
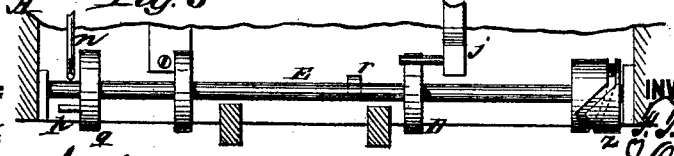


Fig. 3



WITNESSES:

F. McArdle

John Goetschals

INVENTOR:

F. T. Stevens

J. O. Stevens.

BY

ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRED T. STEVENS AND JAMES O. STEVENS, OF COOS, NEW HAMPSHIRE.

IMPROVEMENT IN MACHINES FOR SAWING AND BORING WOODEN BLOCKS.

Specification forming part of Letters Patent No. **185,705**, dated December 26, 1876; application filed September 22, 1876.

To all whom it may concern:

Be it known that we, FRED T. STEVENS and JAMES O. STEVENS, of Coos, in the county of Coos and State of New Hampshire, have invented a new and Improved Machine for Sawing and Boring Blocks of Wood, of which the following is a specification:

Figure 1 is a plan, with a portion broken away to show the construction more clearly. Fig. 2 is a transverse section on line *x x* in Fig. 1. Fig. 3 is a detail view of one of the shafts and its cams.

Similar letters of reference indicate corresponding parts.

Our invention relates to a machine for automatically sawing and boring blocks of wood; and it consists of the combination of a clamping device for holding the wood while being sawed and bored, and grooved rollers, acting intermittingly, for feeding the bar of wood to the machine, a swinging saw for cutting off the blocks, and a sliding boring-mandrel, that is moved up at the proper instant for boring the block. The various parts are operated by cams and levers, as hereinafter more fully described.

The object of the invention is to provide a machine that shall automatically and rapidly cut blocks from a bar or strip of wood, and, while still clamped in the machine, to bore them centrally.

A is the main frame of the machine, which should be substantially made; and B is a table, covering a portion of the frame, and provided with the dovetail ways *a*, in which is placed the clamping device C. This clamping device consists of the part *b*, having the right-angled notch *c* in its inner end, and the angular teeth *e* at its outer end, which engage with a pinion, *d*, having similar teeth on two of its sides. The part *f* of the clamping device is provided with a notch, *c'*, that is similar to the notch *c*, and is bolted at its outer end to a spring-bar, *g*, provided with angular teeth *e'*, which engage with the teeth on the upper side of the pinion *d*. The bar *g* receives the bolt that attaches it to the part *f* in a slot, so that the relative position of these parts may be changed. The pinion *d* is secured to a short shaft, *h*, which is journaled in a box, *i*, secured to the table. A lever, *j*, is adjustably attached to the shaft *h*, and is provided with a pin, *k*, that engages with a cam, D, on the shaft E. This cam is so proportioned that it shuts the clamping device, and holds the block during the greater portion of its revolution, or while it is cut and bored.

F is a wheel, having an angular groove in its circumference, and secured to the shaft *l*, which is journaled in the sides of the frame of the machine. A ratchet-wheel, *m*, is secured to the shaft *l*. A lever, *n*, is also hung loosely upon it, which carries a pawl, *o*, that engages with the said ratchet-wheel. A pin, *p*, projects from the side of the disk *q*, placed on the shaft E, and moves the lever *n* at every revolution. G is a grooved roller, placed directly above the wheel F, in such a position as to clamp a bar of wood passing between the grooved wheels.

H is a saw-mandrel, journaled in a swinging frame, I, and carrying a saw, A'. To the said frame is attached a lever, J, that is moved by a cam, *r*, on the shaft E. A spring, *s*, draws the frame I to its normal position after it is moved by the cam *r*.

K is a frame, that carries the boring-mandrel *u*, and slides upon ways *v*, arranged on the table B at right angles with the ways *a*. A lever, *w*, attached to a rocking shaft, *y*, is connected to the frame K by a link, and is moved by a cam, *z*, on the shaft E, which engages a pin, *a'*, that projects from the lever. The mandrel *u* carries a bit of the required form and size. A counter-shaft, L, having the pulley *b'*, for driving the saw, and the pulley *c'*, for driving the boring-mandrel, is journaled in the lower part of the frame.

The operation of the machine may be described as follows: The boring-mandrel and saw being in motion, and a bar of wood of the required size being placed between the grooved feeding-wheels, with the end in the clamping device, the cam *r* on the shaft E causes the saw-frame and saw to move forward and cut a block from the bar of wood. At the same time the boring-mandrel is made to advance by the action of the cam *z*, when the revolving bit bores the block longitudinally. This being done, the saw and the boring-mandrel regain their normal position, and the cam D releases the clamping device, when the spring

d' draws the lever j back and the block drops. The pin p now raises the lever n, turning the feed-wheels F G, carrying the end of the rod between the jaws of the clamping device. The cam D moves the lever j, and, consequently, the pinion d, thus drawing the clamp together on the rod, when the operation of sawing and boring is repeated.

The clamp C may be adjusted for rods of different sizes, and rods of various forms may be bored and sawed.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The combination of the cam D, pinion d, lever j, parts b, f, and g, and ways a, substantially as herein shown and described.

FRED T. STEVENS.
JAMES O. STEVENS.

Witnesses:
JEREMIAH BARTLETT,
MARY P. BARTLETT.