G. H. GREGORY.

Tenoning-Machine.

No. 213,413 Patented Mar. 18, 1879.

Fig: 1.

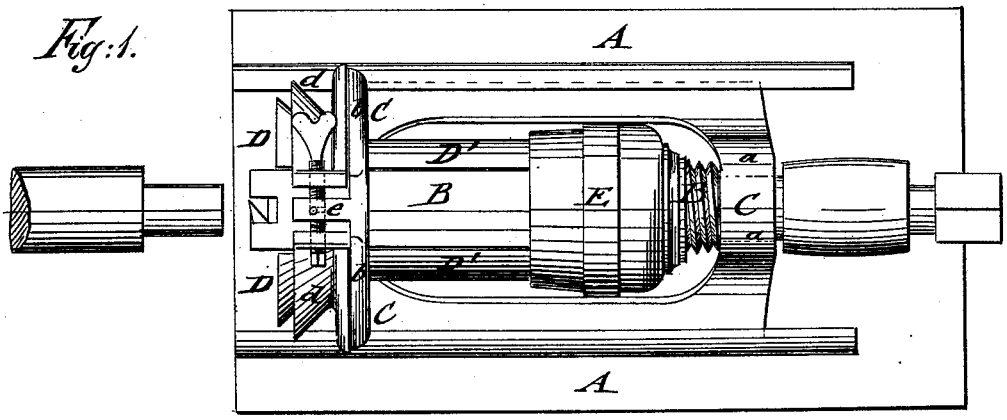


Fig: 2.

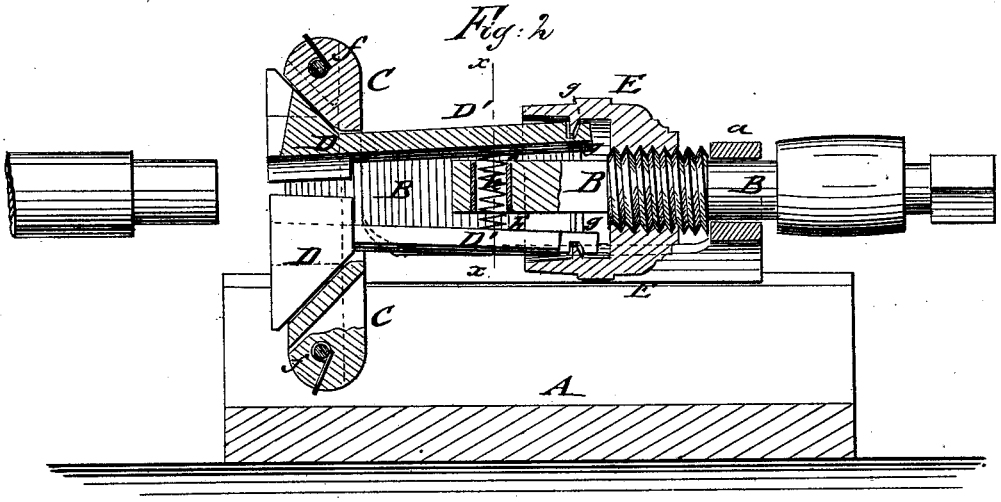


Fig: 4.

Fig: 3.

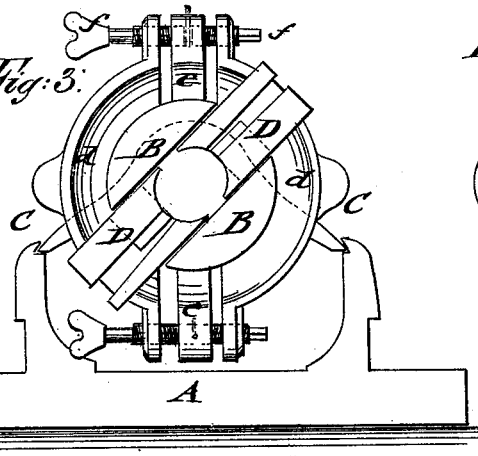
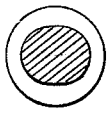


Fig: 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE H. GREGORY, OF CANNON'S STATION, CONNECTICUT.

IMPROVEMENT IN TENONING-MACHINES.

Specification forming part of Letters Patent No. **213,413**, dated March 18, 1879; application filed August 29, 1878.

To all whom it may concern:

Be it known that I, GEORGE H. GREGORY, of Cannon's Station, in the county of Fairfield and State of Connecticut, have invented a new and Improved Tenoning-Machine, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a top view, Fig. 2 a vertical longitudinal section, and Fig. 3 a front elevation, of my improved tenoning-machine. Fig. 4 is detail vertical transverse section of the cutter-stock on line *x x*, Fig. 2, and Fig. 5 is a detail end view of an oval tenon cut by my machine.

Similar letters of reference indicate corresponding parts.

This invention has for its object to furnish, for cutting tenons of round and oval shape, an improved machine, by which the tenons are cut with rapidity and facility, the machine being either moved forward to the work or the work to the machine; and the invention consists of a forked revolving cutter-stock having spring-acted and removable cutter-heads, that are secured to the stock and set for round or oval tenons by means of symmetrically and laterally adjustable flaring guide-sections of the supporting-frame of the cutter-stock. The cutter-heads are locked to an annular rim at the interior of a screw-nut, and adjusted to the size of the tenons by screwing the nut forward or back on the mandrel of the stock.

Referring to the drawings, A represents the bed-frame, along guide-rails of which the cutting mechanism is moved to or from the work. The cutter-stock B revolves in bearings of a guide-frame, C, which is either made movable on the bed-frame or secured stationary thereto, according as the cutting mechanism is to be fed to the work or the work to the cutters. The frame C has a rear bearing, *a*, for the mandrel of the cutter-stock B, and also a stationary ring-shaped front portion, *b*, along which conically-flaring shell-sections *d* for the conical head of the stock B are adjusted symmetrically to projecting center cheeks *e* by means of right and left hand screw-bolts *f*. The bolts *f* pass through the cheeks or lugs *e* and engage top and bottom flanges of the shell-sections *d*, so as to adjust them simultaneously.

The cutter-stock is centrally recessed at diametrically-opposite sides for guiding the cutter-heads D, whose shanks D′ are fitted into the recesses and locked by their recessed rear ends to an interior annular rim, *g*, of an adjusting-nut, E, of the cutter-stock. A spiral spring, *h*, passes through a center piece, *h′*, of the cutter-stock, and acts upon the shanks of the cutter-heads, so as to press against the rim of the nut E and keep up the intimate interlocking of the shanks therewith. The outer ends of the cutter-heads are made conical to correspond with the flare of the symmetrical shell-sections *d*. The cutter-heads carry in central recesses the cutting-knives, which are attached thereto and adjusted therein in any approved manner. For sharpening the cutter-knives the cutter-heads are detached from the stock by pressing on their shanks and releasing them from the retaining-rim of the adjusting-screw. The knives may then be removed, sharpened, and replaced.

The adjusting-nut E turns on a screw-thread of the mandrel of the stock, and imparts a forward or backward motion to the cutter-heads, so as to adjust them to the greater or smaller size of tenon. For cutting round tenons the shell-sections of the guide-frame are screwed up close to the center cheeks, while for oval tenons they are adjusted to greater or less distance from the same, according to the greater or less degree of oval shape desired.

The facility by which either shape of tenons of any size may be cut by the machine renders the same, in connection with its simplicity and compactness, of special advantage to wagon and carriage builders and other wood-working trades.

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

1. In a tenoning-machine, the combination of a supporting guide-frame with a recessed revolving cutter-stock, and with longitudinally and laterally adjustable cutter-heads secured to the stock to cut tenons, substantially as and for the purpose herein shown and described.

2. The combination of the supporting guide-frame having symmetrically-adjustable flaring front sections with the recessed cutter-stock having conical front ends, and with

spring-acted cutter-heads having also conical ends, substantially as shown and described.

3. The combination, in a tenoning-machine, of a recessed revolving cutter-stock having threaded mandrel with spring-acted cutter-heads, guided therein and adjusted by a screw-nut, with interior annular rim that interlocks with notches of the shanks of the cutter-heads, substantially as shown and described.

4. The combination of a supporting guide-frame having rear bearing for the mandrel of the cutter-stock and flaring symmetrically-adjustable front-sections with a recessed cutter-stock, removable and spring-acted cutter-heads, and with a screw-nut that is adjustable on the threaded mandrel and engages the rear ends of the shanks of the cutter-heads, substantially as and for the purpose shown and described.

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