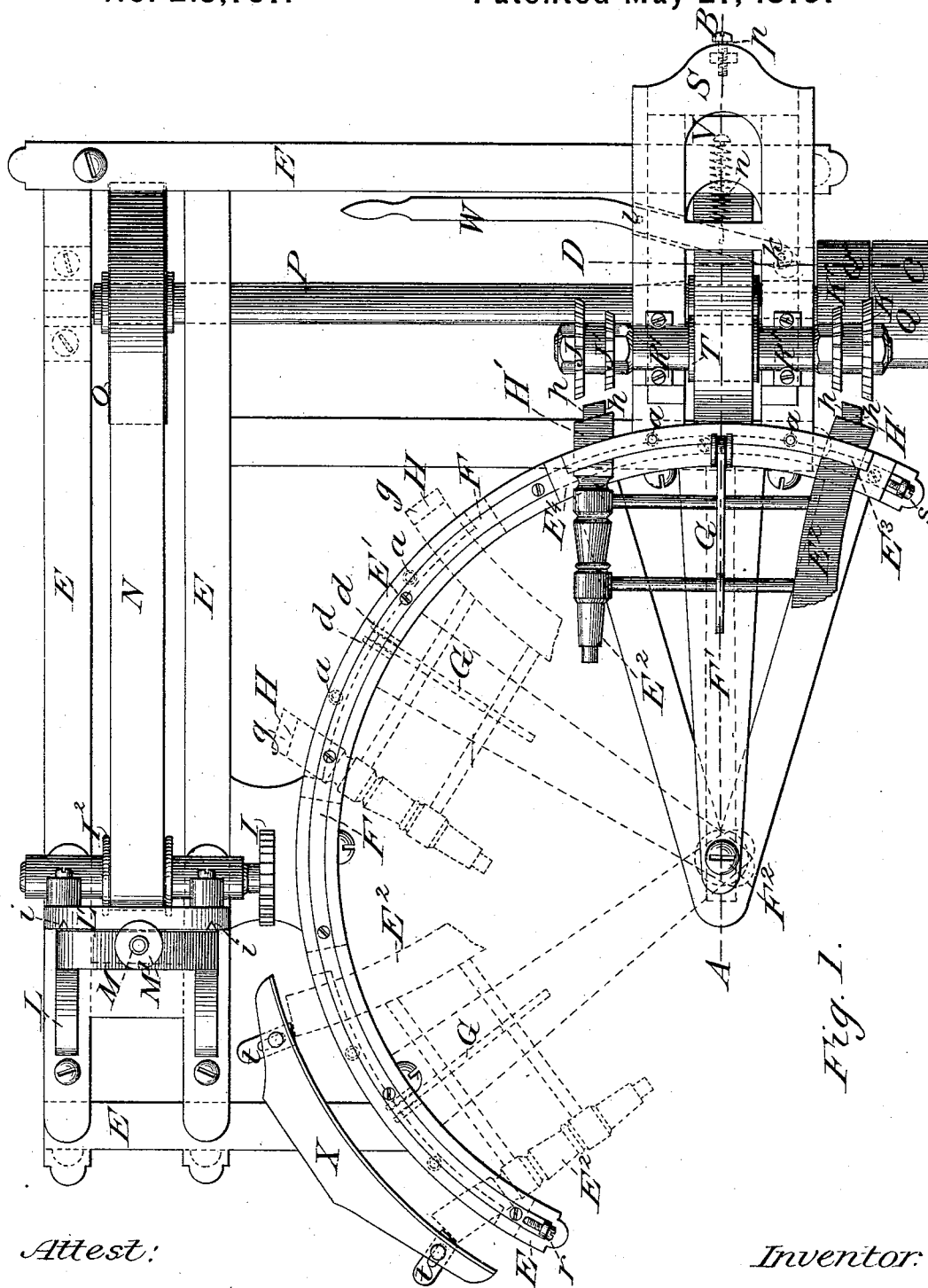


F. F. PARKER.

Machine for Tenoning Chair-Legs.

No. 215,767.

Patented May 27, 1879.



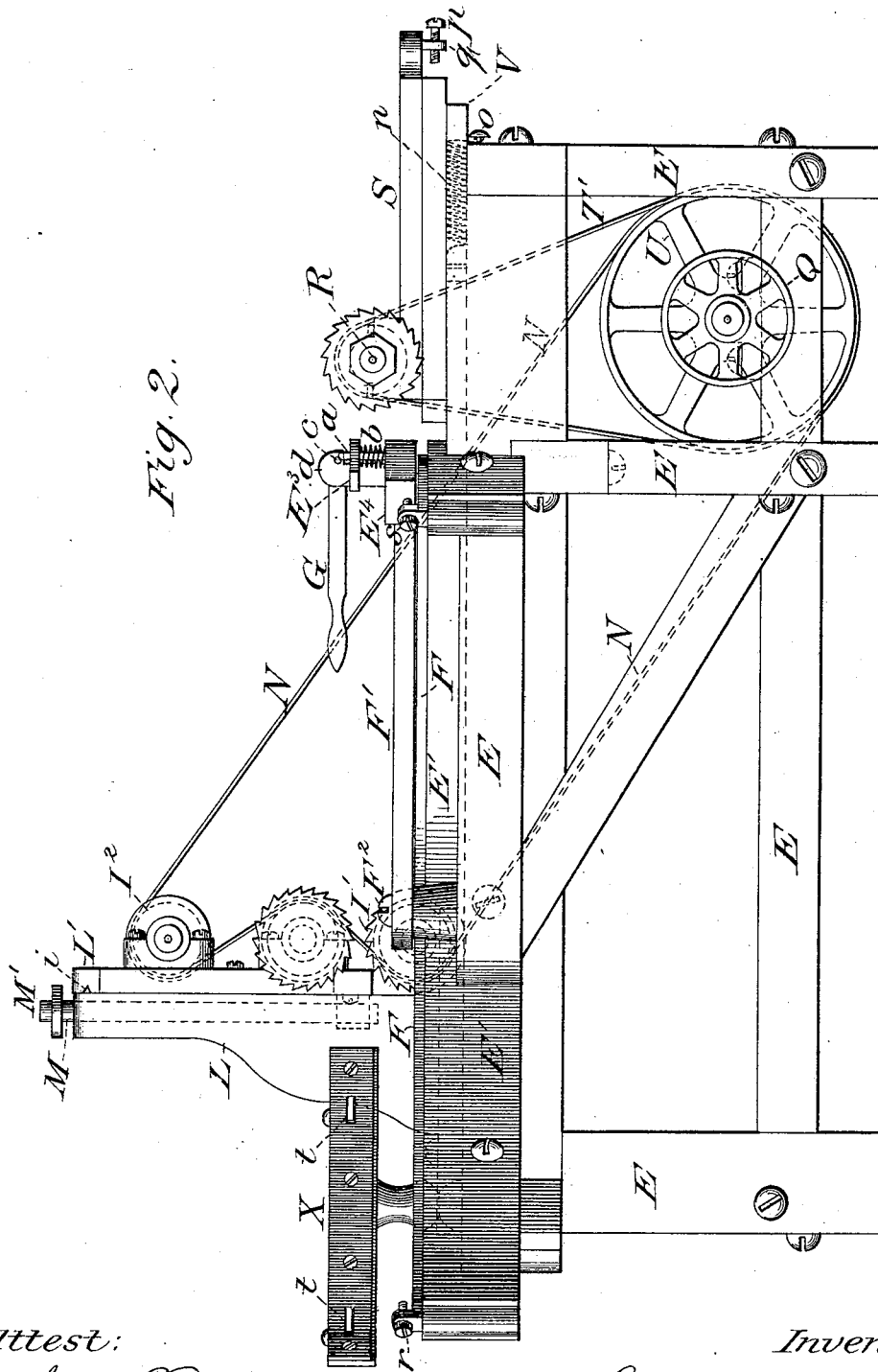
Attest:

Arthur P. Derby
Francis Richardson

Inventor:

Frank G. Parker

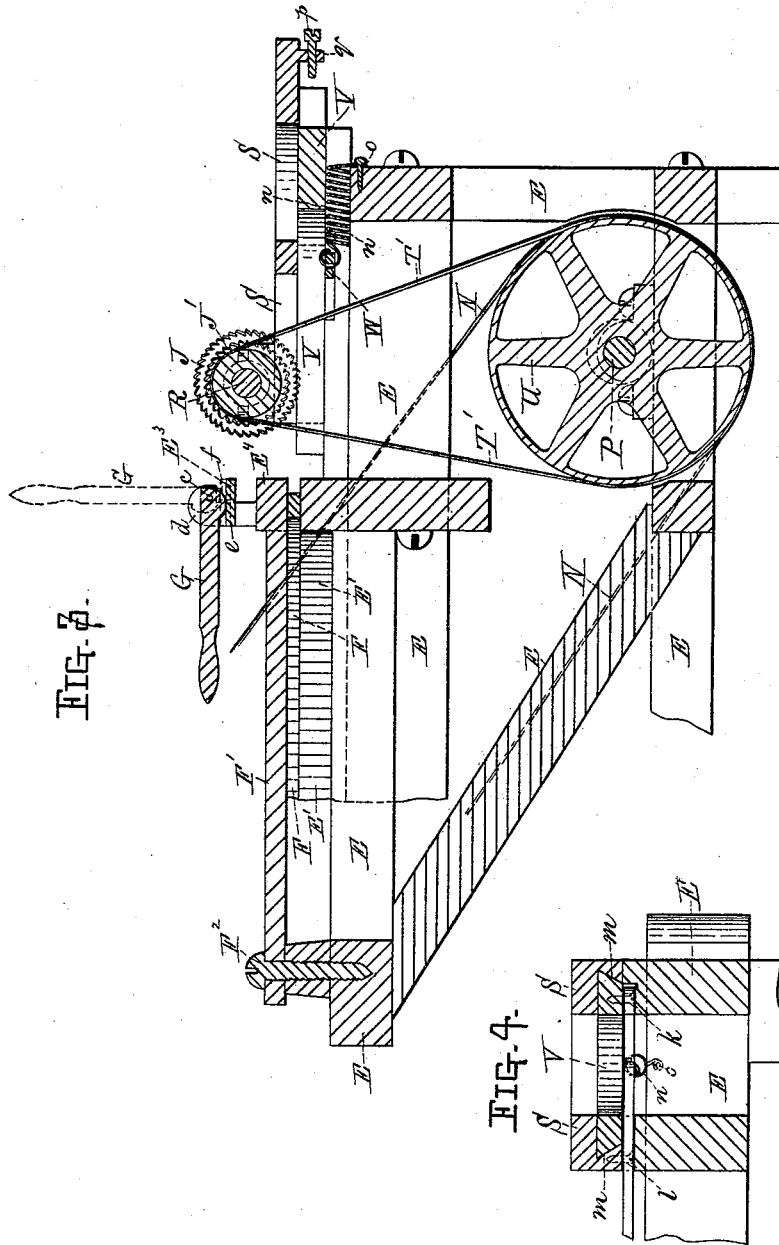
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UNITED STATES PATENT OFFICE.

FRANK F. PARKER, OF GARDNER, MASSACHUSETTS, ASSIGNOR TO
PHILANDER DERBY, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR TENONING CHAIR-LEGS.

Specification forming part of Letters Patent No. **215,767**, dated May 27, 1879; application filed
February 17, 1879.

To all whom it may concern:

Be it known that I, FRANK F. PARKER, of Gardner, in the county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Machines for Forming Tenons upon the Ends of the Legs of Rocking or other Chairs; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

Figure 1 represents a top or plan view of my said improved tenoning-machine, also showing by full and dotted lines a portion of a rocking-chair as it passes through the different stages of forming tenons upon the legs of the same, as will be hereinafter more fully described. Fig. 2 represents a side view of the parts shown in Fig. 1 (with the sections of chair left out) looking in the direction indicated by arrow 1 of the same figure. Fig. 3 represents upon an enlarged scale a vertical central longitudinal section through a portion of the machine taken on line A B, Fig. 1, looking in the direction indicated by arrow 1 of the same figure; and Fig. 4 also represents upon the same enlarged scale a vertical transverse section taken on line C D, Fig. 1, looking in the direction indicated by arrow 2 of the same figure.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it more in detail.

In the drawings the parts marked E represent the frame-work of the machine, upon the circular part E¹ of which is secured a track, F, upon which the chair-supporting carriage F¹ of the machine travels back and forth, as will be hereinafter more fully described.

Carriage F¹ is pivoted at the point F² upon the center from which the circular part E¹ is struck, and its outer end is made circular and provided with a chair-holding device arranged and constructed in the following manner:

A thin metallic plate, E³, provided with two openings, is arranged to work up and down in said openings upon upright pins *a a*, secured in the part E⁴. A constant pressure is produced upon the under side of plate E³ to hold

the latter up, so as to insert the chair-legs E² between the same and the top of the part E⁴, by means of spiral springs *b b* placed around pins *a a*.

The chair-legs having been inserted under plate E³, as represented in Fig. 1, said plate is then pressed down, so as to hold them in position by means of a cam-lever, G, pivoted at the point *c* between standards *d d*, secured to the part E⁴ of carriage F¹.

As will be observed by Fig. 3 of the drawings, a flange, *e*, is formed on plate E³, which projects in between standards *d d* for the circular part *f* of cam-lever G to act upon.

It will therefore be seen that by raising the end of said lever G plate E³ is allowed to spring up, and vice versa.

The tenons H are cut upon the sides *g g* by means of saws or cutters I I¹, and upon the edges *h h* of tenons H¹ by means of double parallel saws or cutter J J' and K K'.

Saws or cutters I I¹ are arranged upon the upright parts L L', as represented by Fig. 2 of the drawings.

The lower cutter, I, is arranged to turn upon the end of a horizontal shaft, which turns in a bearing secured to the stationary upright part L.

The other cutter, I¹, is similarly arranged upon the adjustable part L', said part L' being arranged to slide up and down in grooves *i i*, and operated by means of an adjusting rod or shaft, M, its upper end being provided with a handle, M', by which to turn it, and having a bearing in the upper circular end of stationary part L, and its lower end provided with a thread which works in a bearing secured to the sliding part L', as represented by dotted lines, Fig. 2, of the drawings.

Upon both of the shafts of saws or cutters I I¹ are centrally secured driving-pulleys, and above said pulleys is also arranged another pulley, I².

Driving-power is imparted to saws or cutters I I¹ by means of a belt, N, which passes around the top and bottom pulleys and forward of the middle one, said belt N being in turn driven by any suitable mechanism connected with the main driving-power. In this instance the belt is passed around a large driv-

ing wheel or pulley, O, which is secured to a horizontal shaft, P, turning in bearings secured to frame-work E, and said shaft is in turn driven by means of a driving-pulley, Q, secured upon its outer end, around which is passed a belt connected with the main driving-power. A pulley, Q', is loosely fitted upon shaft P, so that the belt can be slipped from pulley Q upon the same, and the driving-power thereby unshipped from the machine.

Parallel cutters J J' and K K' are arranged and secured upon the ends of a horizontal shaft, R, which turns in bearings R' R', secured to sliding parts S, and upon the center of said shaft is also secured a driving-pulley, T, which is driven by means of a belt, T', passed around the same, and a large driving-pulley, U, secured to driving-shaft P.

Sliding part or carriage S slides back and forth upon a stationary part, V, secured to frame-work E, being operated by means of a crank or lever, W, pivoted at its inner end to the stationary part V at *k*, and at the point *l* to the movable carriage S. (See Fig. 4 of the drawings.)

In order that carriage S may be kept in position upon the stationary part V, the outer sides of the latter are beveled, as represented at *m m*, Fig. 4, and said carriage S correspondingly beveled, so as to fit upon the same.

Carriage S having been moved forward by crank or lever R, so that the saws J J' and K K' may cut the edges *h h* of tenons H', said carriage is then drawn back by means of a spiral spring, *n*, secured at one end to said lever and at the other end to the frame-work E at *o*, or any other suitable device may be employed for such a purpose, such, for instance, as a weight and pulley.

In order that saws or cutters J J' and K K' may not be carried forward too far by lever W in cutting the edges *h h* of tenons H', an adjustable stop-screw, *p*, is provided, which may be turned in or out in a flange or projection, *q*, formed upon the under side of the end of carriage S. Both ends of track F are also provided with similar adjustable stop-screws, *r* and *s*, for stopping the swinging chair-carriage F' at the proper point. Screw *r* stops the carriage at the proper point for the chair to be adjusted in the same against adjustable gages *t t*, arranged in the elevated part X, secured to frame E, and screw *s* stops the carriage at the proper point for saws or cutters J J' and K K' to cut the edges *h h* of tenons H' when said cutters are carried forward by the action of lever W.

Saws or cutters J J' and K K' may be arranged at any point upon the circular part E', and instead of moving the cutters forward the carriage may be moved forward to cut the edges *h h* of the tenons. Said saws or cutters may also be arranged to be moved vertically instead of horizontally, if preferred, without departing from the principle of my invention.

It will be seen from the foregoing descrip-

tion that a chair may be adjusted and secured in carriage F', the carriage then swung around, and the sides *g g* cut by saws or cutters I I', after which the carriage is swung to the other set of cutters, and the edges *h h* then cut by saws or cutters J J' and K K' to form the finished tenon H' in a very easy and expeditious manner.

Those skilled in the art to which my invention belongs will readily understand and appreciate the great practical value of my said invention, since by it tenons are produced with shoulders upon both the sides and edges thereof, while the tenons are left projecting in such a manner that they will enter mortises having perpendicular sides and edges and completely fill the same, whereby the joint can be made more secure and rigid than by the old mode or process practiced previous to my invention, in which case the tenons were not provided with shoulders upon their edges, while they did not stand parallel with each other, and consequently to insert them in their respective mortises it was necessary to cut off their corners and the joints formed by such old style of tenons, which have always proved defective and objectionable.

Then, again, by my invention, the tenons, being all uniform, will fit the mortises in any of the rockers; consequently there is no loss of time in setting up the chairs, as was the case with the old style of tenon, when each tenon had to be fitted to its respective mortise as the chairs were set up.

Having described my improvements in machines for tenoning rocking and other chairs, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

1. In a chair-tenoning machine, the combination, with a suitable carriage for supporting a section of the chair the legs of which are to be tenoned, of two sets of tenoning-cutters, I I' and J J' and K K', substantially as and for the purposes set forth.

2. The combination, with the circular track F and swinging chair-carriage F', of sliding carriage S and tenoning-cutters J J' and K K', substantially as described, whereby chair-tenons can be cut with shoulders upon their edges, which are left projecting parallel to each other, as shown, and for the purposes set forth.

3. The combination, with swinging chair-carriage F' and circular track F, of depressing holding-plate E', cam-lever G, and adjusting stop-screws *r* and *s*, substantially as and for the purposes set forth.

4. The combination, with swinging carriage F', depressing holding-plate E', and cam-lever G, of stand X, provided with adjustable gages *t t*, substantially as and for the purposes set forth.

FRANK F. PARKER.

Witnesses:

ARTHUR P. DERBY,

FRANCIS RICHARDSON.