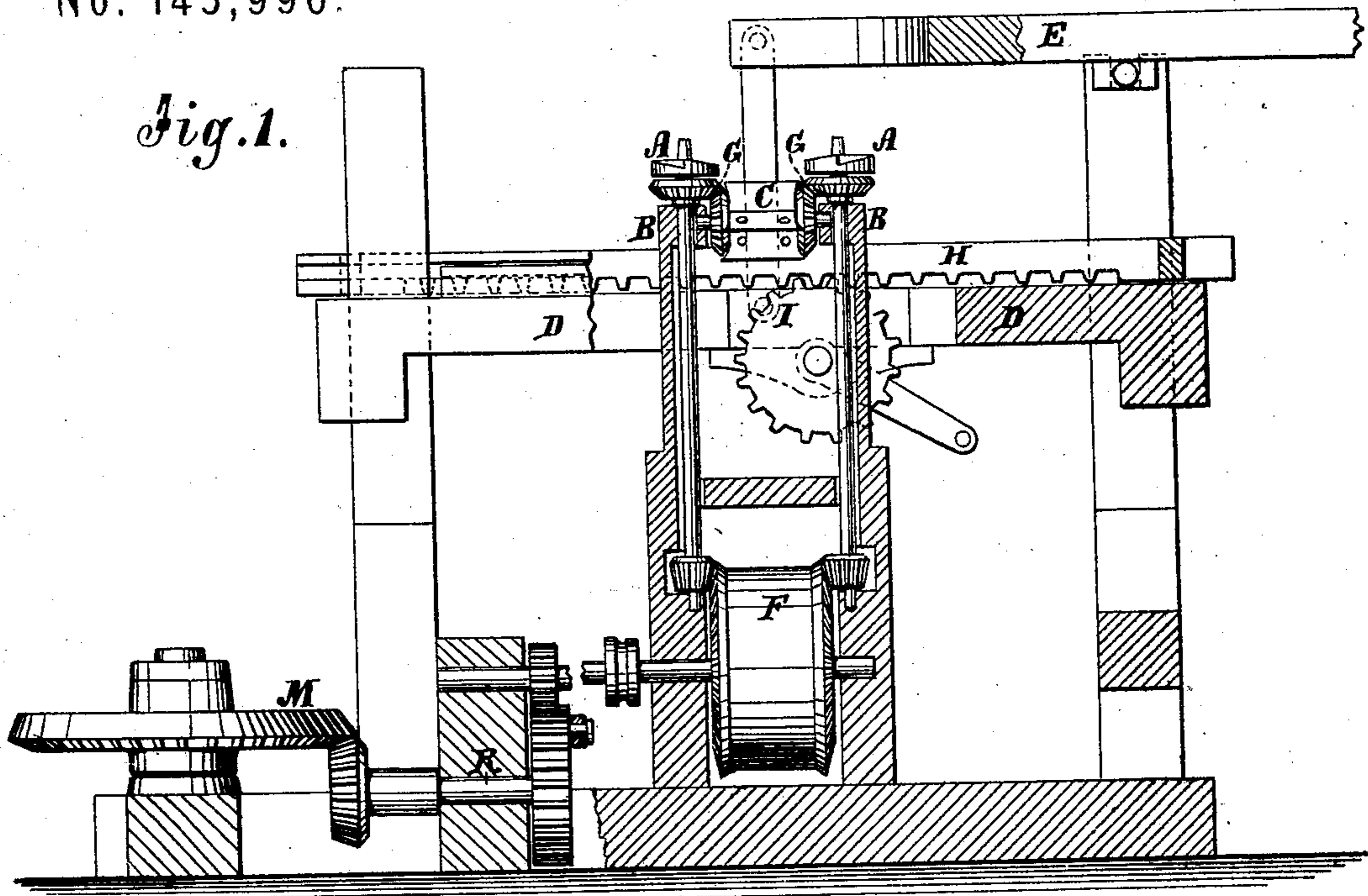


J. H. EVANS.  
Fence-Machines.

No. 145,996.

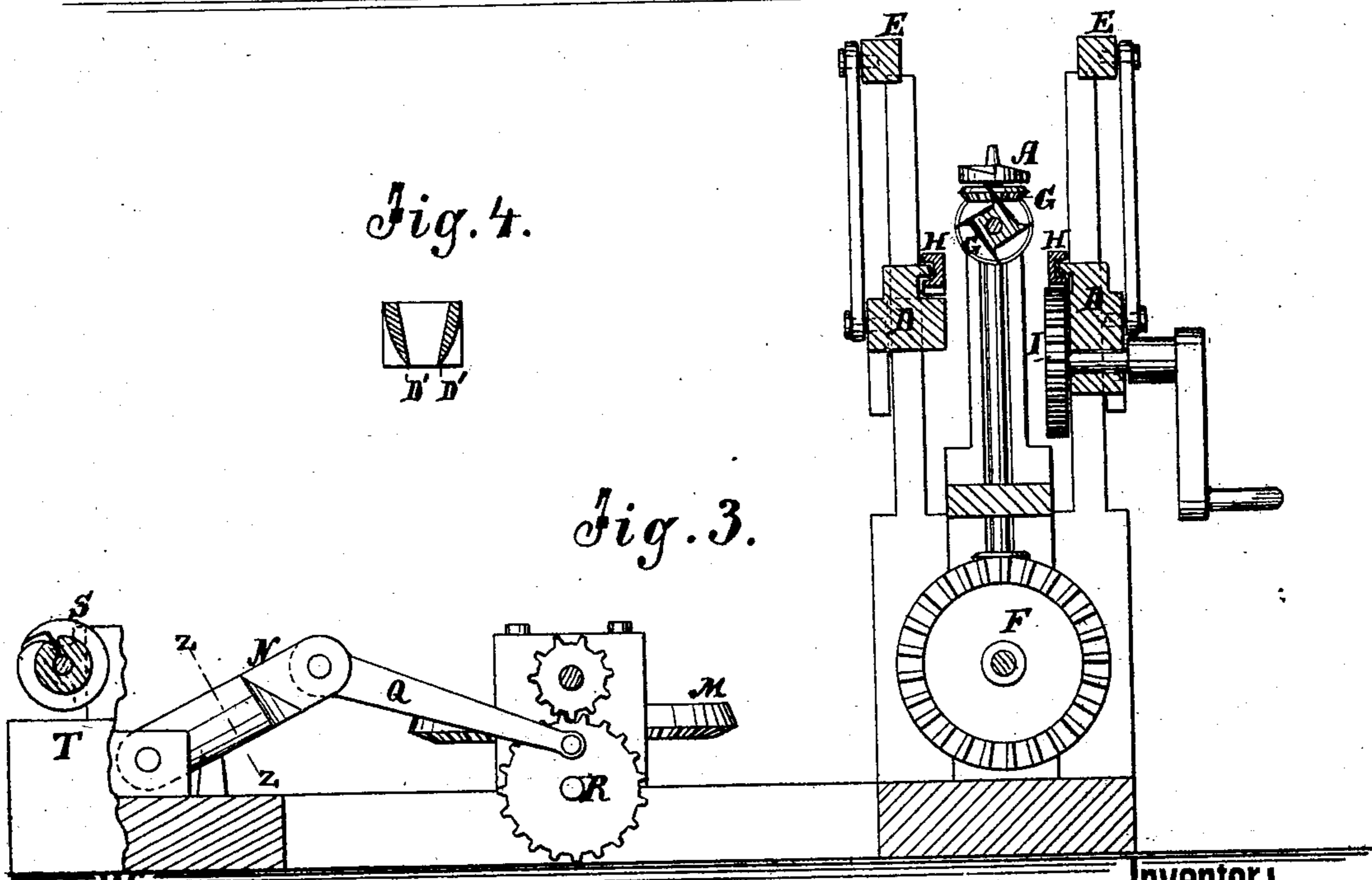
Patented Dec. 30, 1873.



*Fig. 4.*



*Fig. 3.*



Witnesses:

*A Bennekenhof.*  
*C. C. C. C.*

Inventor:

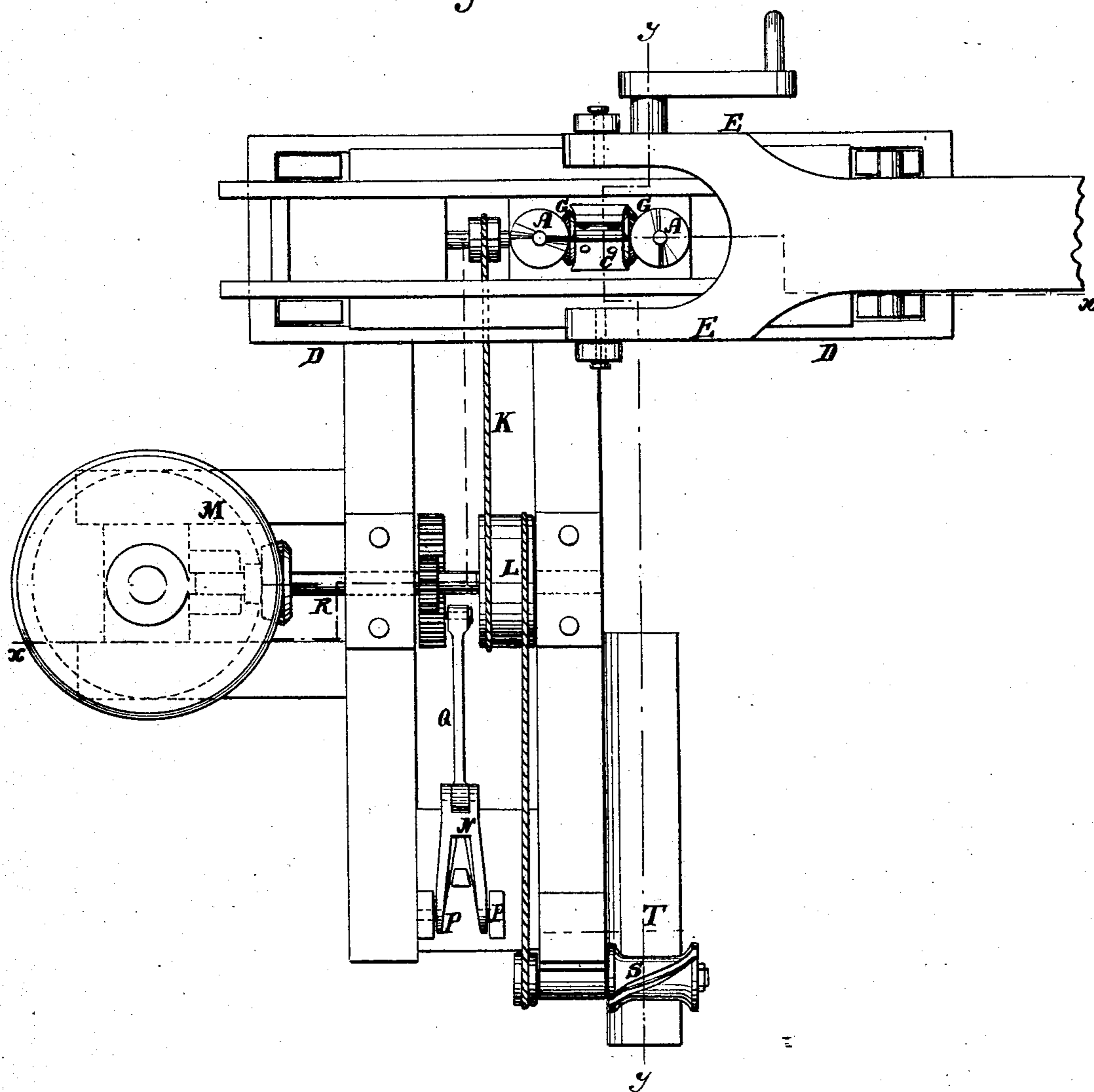
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Patented Dec. 30, 1873.

Fig. 2.



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# UNITED STATES PATENT OFFICE.

JOHN H. EVANS, OF DALLAS, KENTUCKY.

## IMPROVEMENT IN FENCE-MACHINES.

Specification forming part of Letters Patent No. **145,996**, dated December 30, 1873; application filed April 26, 1873.

*To all whom it may concern:*

Be it known that I, JOHN H. EVANS, of Dallas, in the county of Pulaski and State of Kentucky, have invented a new and Improved Fence-Machine, of which the following is a specification:

This invention relates to improvements in machinery for mortising posts and fitting the ends of the rails for "post-and-rail" fences, whereby it is designed to produce a means of accomplishing the same more cheaply and rapidly than by any means at present in use. The invention consists in an arrangement of boring and planing instruments and a movable holding-carriage for making the mortises in the posts; also, of a crotched vibrating cutter for tapering the ends of the rails for fitting the said mortises.

Figure 1 represents a sectional elevation of my improved machine, taken on the line *xx* of Fig. 2. Fig. 2 represents a plan view of the same, and Fig. 3 represents a sectional elevation taken on the line *yy* of Fig. 2. Fig. 4 is a section of the tapering tool on the line *zz* of Fig. 3.

Similar letters of reference indicate corresponding parts.

For making the mortises in the posts I provide a pair of rotary boring-instruments, A, projecting above their supports B, and a rotary planing-tool, C, arranged between them, also a carriage, D, on which the post is placed over these instruments, and pressed down on them by a hand-lever, E, or by gravity, the boring and planing instruments being rotated at the same time. The said boring-tools A make circular holes through the posts slightly in advance of the planing-tool, forming the end walls of the mortises, and the planing-tool splits out the substance intervening between the said holes. The boring-tools derive motion from a bevel-wheel, F, and pinions at the bottom of the frame of the machine, where their shafts are supported in steps, and the planing-tool is operated by bevel-gears G from one or both of the shafts of the boring-tools. In practice it is designed that these bevel-gears shall be so arranged that the ends of the planing-tool will project sufficiently under the boring-tools to remove all the substance between the two holes. The vertically-moving carriage D

is provided with another carriage, H, capable of longitudinal movement, and having a toothed rack, whereby it is moved by a pinion and hand-crank. When one mortise has been made, the carriages and the post which is secured to the upper carriage H are raised above the boring-tools for adjustment longitudinally to the position for the next hole, when the mortising operation is repeated, and so on till all the mortises in the post are made. Motion is communicated to the bevel-wheel F by a belt, K, from a drum, L, which I propose to operate by a horse-power, M, or any other competent means. For tapering the ends of the rails I provide a vibrating bifurcated knife-stock, N, having cutters upon each wall of the bifurcation, as shown at O in the section, Fig. 4. This stock is hinged at the ends P of the prongs, and the other end connected by a rod, Q, to a crank driven by the shaft R from the power-wheel M, and has thereby an oscillating movement imparted to it. The end of the rail to be pointed is presented to this instrument when in the elevated position by passing along the upper surface of the beam to which the stock N is jointed, and between the cutters D' D', Fig. 4, so that when the said cutters are drawn down to a level or nearly level position, they will trim off one or both sides, as may be required, according to the direction in which the rail is presented, whether in line with the cutter-stock or inclined thereto. Both ends of the rails are similarly shaped. It is necessary that these ends be trimmed and shaped on the edges to the proper width of the mortises, and the oval shape of one-half of a mortise when divided vertically, as the ends of two rails are required to lap by each other in the mortises, and therefore each finished end should be equivalent in cross-section to the said one-half of the mortises. To produce this form, I provide a rotary planing or shaping tool, S, on a horizontal axis a short distance above the framing, or a bed, T, placed thereon, and having rotary motion imparted to it by any preferred means from the driving-shaft or drum L, and I force the ends of the rails under this tool, laying them flatwise on the bed T, whereby the edges are trimmed to the proper width, and the desired oval form imparted to the upper surface of the ends of the rails, the con-

figuration of the edge of the cutter being formed to give the required semi-elliptical shape.

By the arrangements herein described I am enabled to provide in one machine a complete set of apparatus for performing all the fitting required to the posts and rails for putting them up in the fences, and I propose to make it portable and adapted for operation in any required place by the application of horse or other power. The wheel M may be provided with drawing-arms, and placed sufficiently away from the bearing of the drum-shaft, and the latter extended to provide room for the horses to work freely. The carriage D may be actuated vertically by any preferred means. The vertically-moving carriage may be made stationary, and the corresponding movements imparted

to the boring and planing instruments, if preferred.

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

1. The combination, with the vertically-moving carriage D, of the boring implements A and planing implement C, all constructed and operating substantially as specified.

2. The bifurcated tapering implement N, provided with the knives O O, hinged to the frame, and arranged and combined for operation substantially as specified.

The above specification of my invention signed by me this 8th day of March, 1869.

Witnesses: J. H. EVANS.

FRANK BLOCKLEY,  
E. GREENE COLLINS.