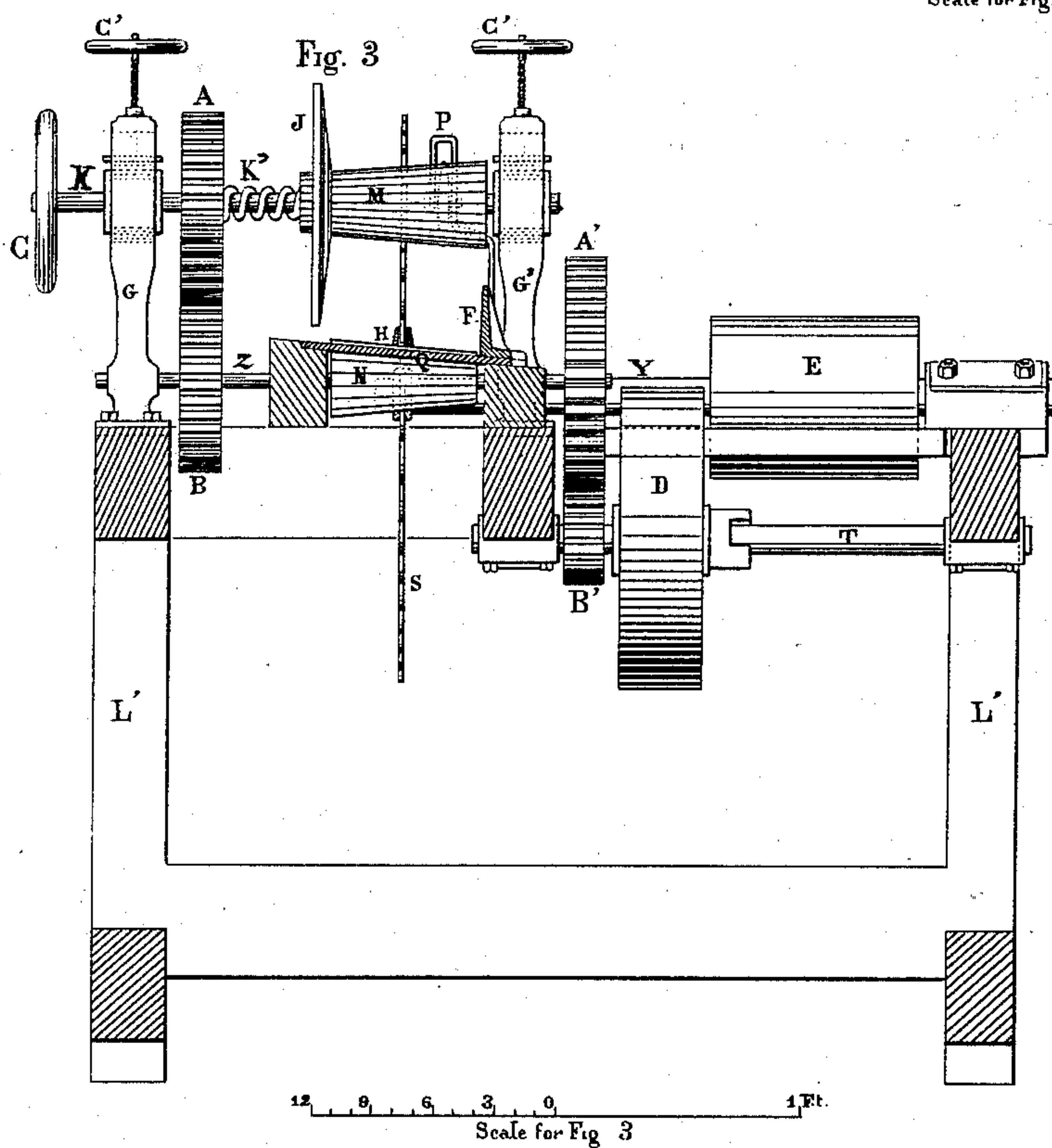
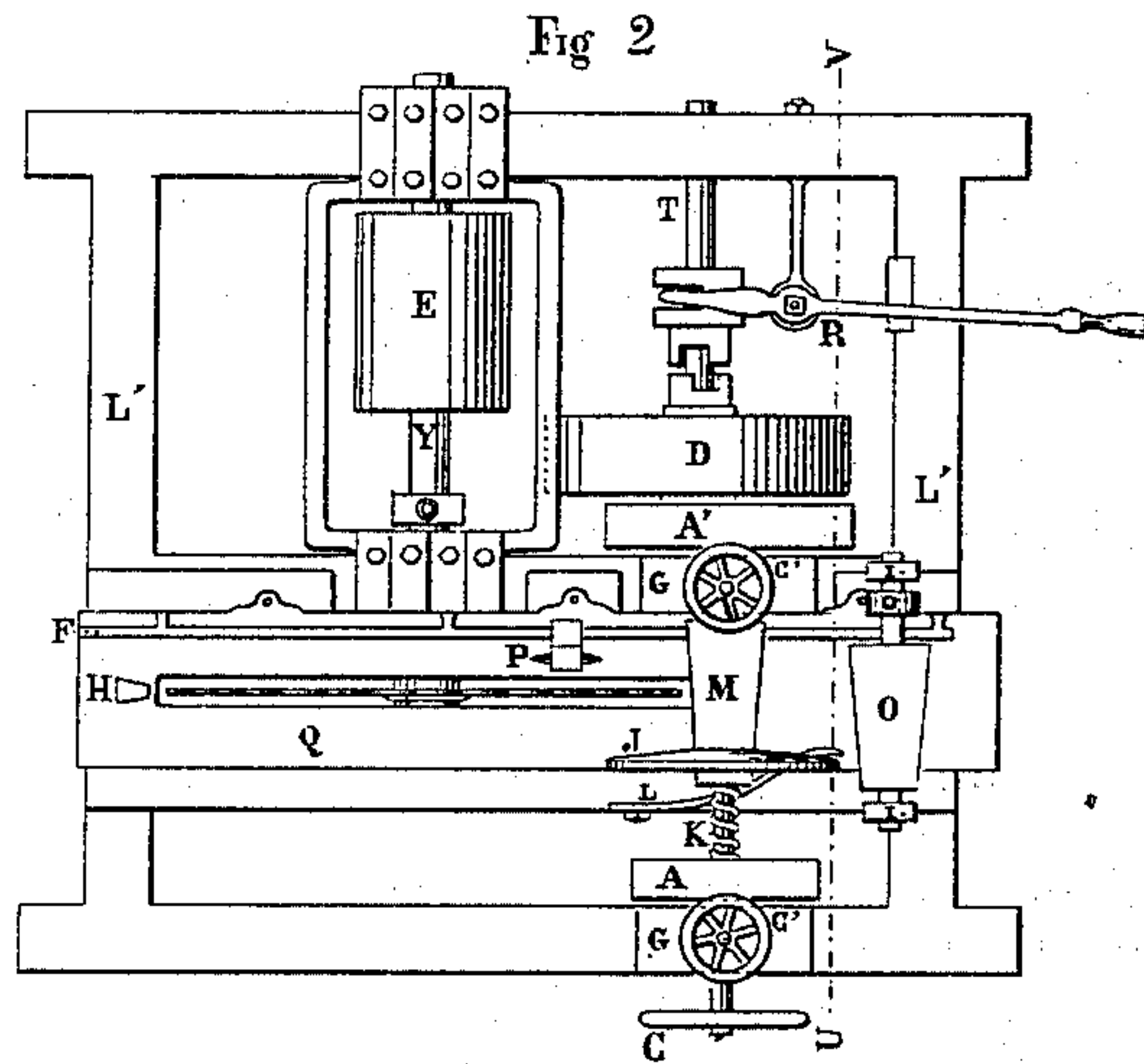
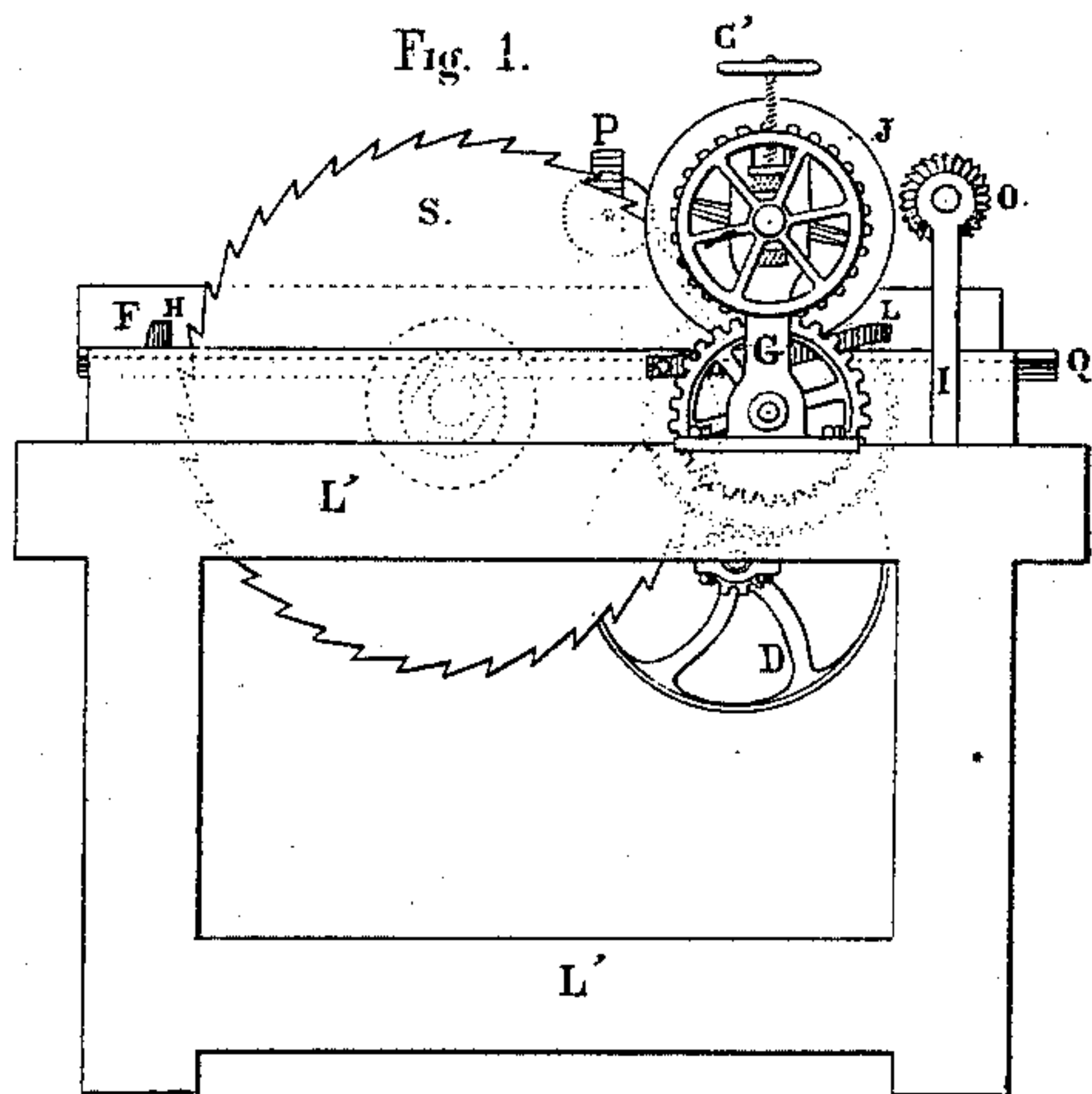


J. C. STEAD.
Circular Sawing-Machines.

No. 156,045.

Patented Oct. 20, 1874.



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES C. STEAD, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN CIRCULAR-SAWING MACHINES.

Specification forming part of Letters Patent No. **156,045**, dated October 20, 1874; application filed January 7, 1873.

To all whom it may concern:

Be it known that I, JAMES C. STEAD, of Jersey City, in the State of New Jersey, have invented certain Improvements in Circular-Sawing Machines, of which the following is a specification:

My invention relates to a wood-sawing machine in which there is combined with a circular saw and the frame and table on which it is mounted, a separate movable bed, upon which the wood is placed to be sawed, the upper surface of said bed being placed at some other than at right angles to the saw, and having upon one side an adjustable guide, held at right angles to said bed, together with an adjustable rotary guide upon the opposite side, and conically-shaped reversed feed-rollers, the whole being so constructed and operating that rectangular blocks of wood may be thereby conveniently sawed through on a line other than parallel to the sides of the same.

Figure 1 is a side elevation of my circular-sawing machine. Fig. 2 is a plan of the same. Fig. 3 is an end elevation of the same.

L is a substantial frame, upon which the several parts of the mechanism of my machine are mounted. It may be made of either wood or iron. S is the circular saw upon its arbor Y, with its pulley E. Q is a bed-plate, preferably of iron, having an opening admitting the saw mounted upon the frame, inclined to the plane of the saw at the fixed angle at which it is desired to present the wood to the saw. F is a guide or gage, also preferably of iron, extending nearly or quite the length of the bed-plate Q, and rising from it at right angles to its upper face. It is secured in position upon the bed-plate by bolts passing through the plate, and ears formed on the lower edge of the guide. The bolt-holes in these ears being slotted, the guide is adjustable, and may be set at any desired distance from the saw. N and M are the feed-rollers, made conical, and placed upon their respective shafts, K and Z, reversed—that is to say, with the larger end opposite the smaller end of the other. The taper of the said rollers corresponds with the inclination of the bed-plate Q. J is a rotary guide running loose upon the shaft K, and pressed against the block in sawing by the spiral spring K', thus making it ad-

justable to blocks of different thickness. The inner surface of this guide is beveled from a line commencing with the small end of the roller M outward toward the periphery, the beveled surface below the said roller being parallel with the face of the guide F. Motion is communicated to the feed-roller N, from the belt-pulley D, through the wheels B' and A', and to the roller M through the gears B and A. The several shafts of these gears are mounted in suitable journal-boxes. The roller M is made yielding by the springs, (rubber being preferable,) placed over the upper section of the journal-boxes, the pressure upon the same being adjusted by means of the screws C' and C''. H is a fixed wedge, placed immediately behind the saw, to separate the sections of the wood being cut, to relieve friction on the saw. P is a yoke or standard, in which is mounted a small loose pulley, designed to hold down the wood in the process of cutting, after it leaves the feed-rollers. O is a loose cone-pulley, corresponding in size and shape to the feed roller N; and L is a leaf-spring, intended to press the wood against the guide F. By means of this roller and spring the proper presentation of the wood to the feed-rollers is secured.

This machine is especially adapted for giving to blocks of wood the beveled form used in the construction of certain descriptions of wooden road-beds; but it is also useful in sawing blocks or pieces of wood for any purpose where it is desired that the plane of the saw-cut should be at some other than a right angle to the top and bottom surfaces, and other than parallel to the side surfaces of the wood it is designed to saw.

It will be observed that no provision is made in this machine to alter the angle of inclination to the saw at which the wood will be presented to be cut. Such alteration can be effected only by exchanging the feed-rollers, the bed-plate, the fixed guide F, and the loose guide J, for others of a different form. If, however, it is desired to change the angle of inclination, other pulleys, guides, and bed-plates may be provided and kept for use adapted to any desired angle of inclination; but, when the several parts of the machine are in position and ready for use, it is not intended that there shall be any adjustability of the parts,

the wood being presented by them at a fixed angle.

The operation of the machine is obvious. For example, blocks of wood designed for a road-bed are usually from three to five inches in length, cut from deal or plank four to six inches in thickness. For one description of road-bed these blocks are made wedge-shaped, and set in the road with the thick ends downward, forming the base, leaving an acute triangular space between the blocks for gravel, &c. To cut these blocks into the tapering form by my machine, being sawed into proper lengths from plank or deal, the opposite sides of which are parallel, they are placed on end, or with the grain of the wood perpendicular, upon the table Q, and one after another fed in between the rollers M N, the spring L pressing each, as it enters, against the guide F. The feed-rollers will carry them against the saw, and the saw

will sever each into two wedge-shaped pieces. An entire plank or deal may be thus sawed into similar-shaped sections. The roller M and guide J adjust themselves to any variations in the height or thickness of the blocks.

What I claim as my invention, and desire to secure by Letters Patent, is—

A wood-sawing machine in which there are combined, with a circular saw and frame or table upon which the saw is mounted, the separate bed-plate Q, the horizontal feed-rollers M and N, the rotary beveled-spring pressure-guide J, mounted upon, and running loosely upon, the shaft of the roller, all arranged and operating as and for the purpose specified.

JAMES C. STEAD.

Witnesses:

J. P. FITCH,

A. LIVINGSTON MILLS.