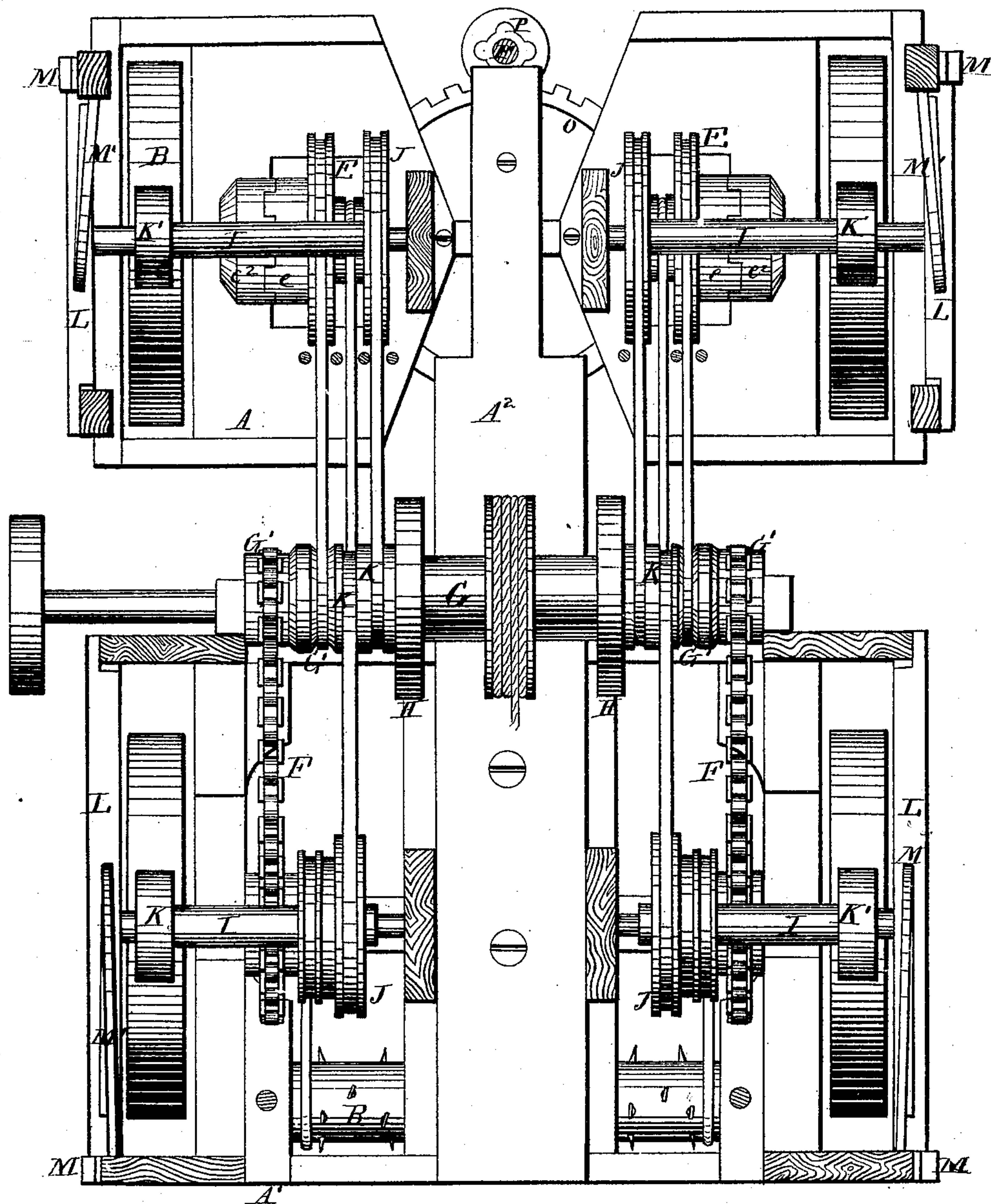


Fig. 1.



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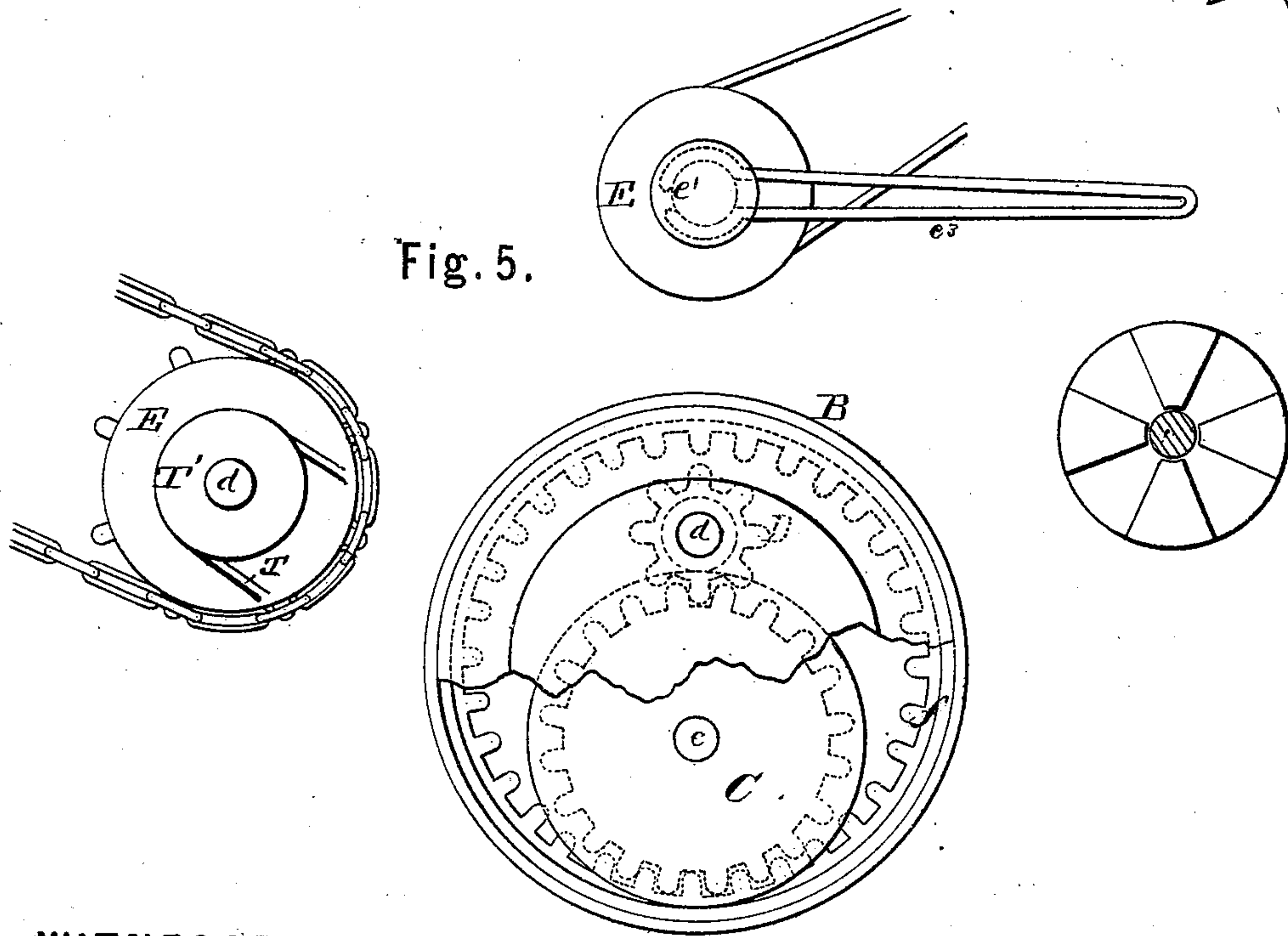
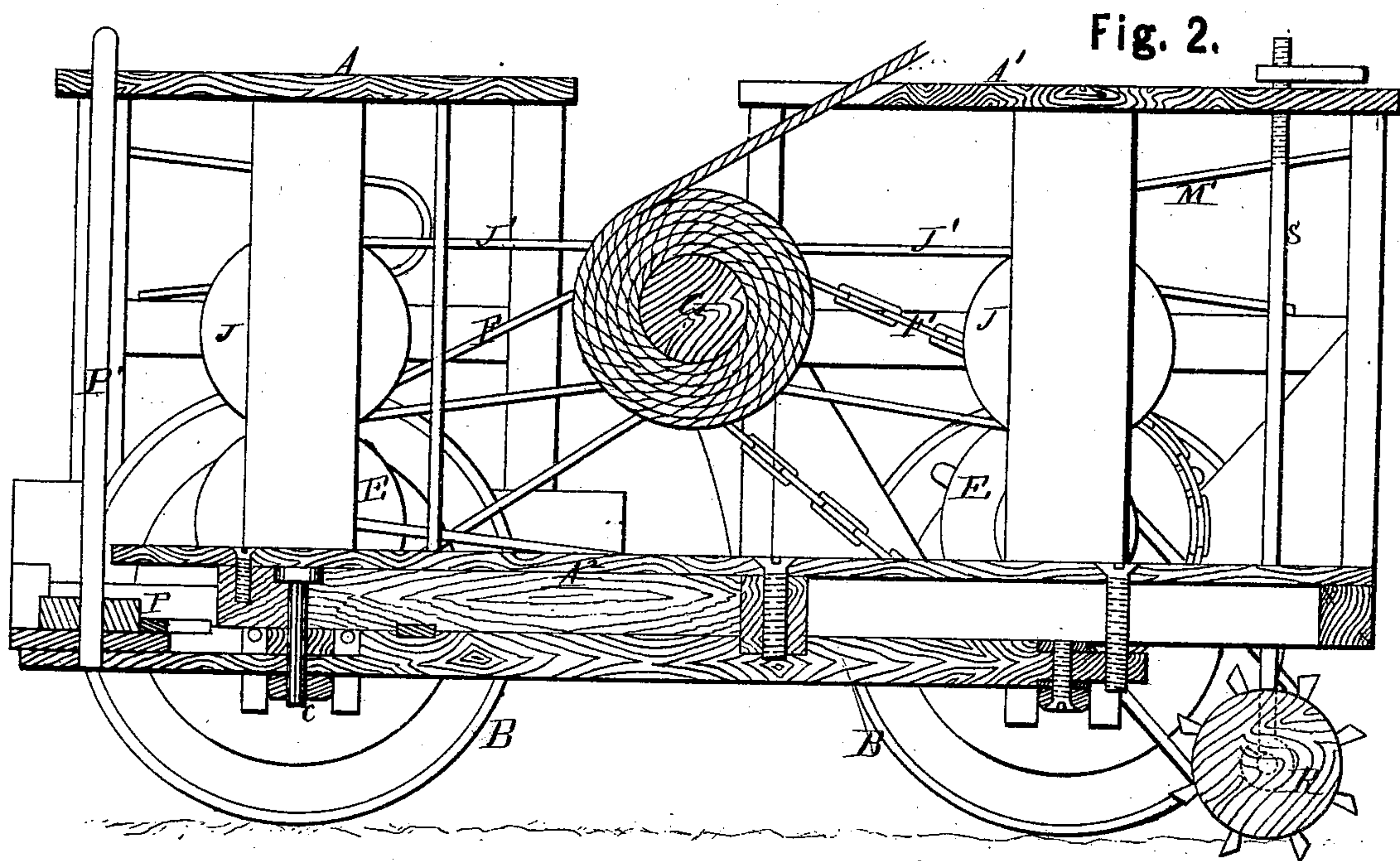
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Improvement in Traction-Engines.
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3 Sheets--Sheet 2.

Patented June 4, 1872.



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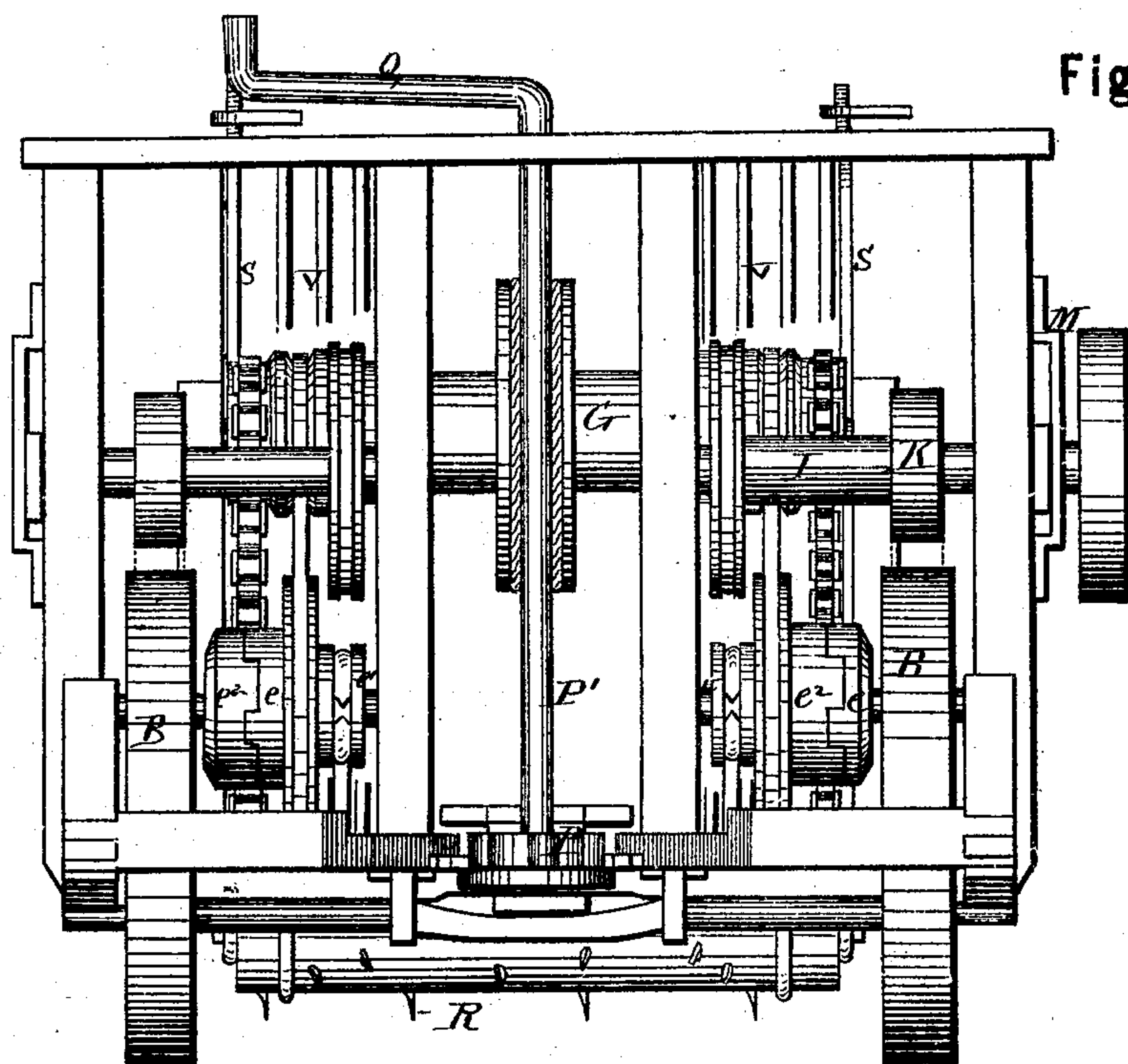


Fig. 3.

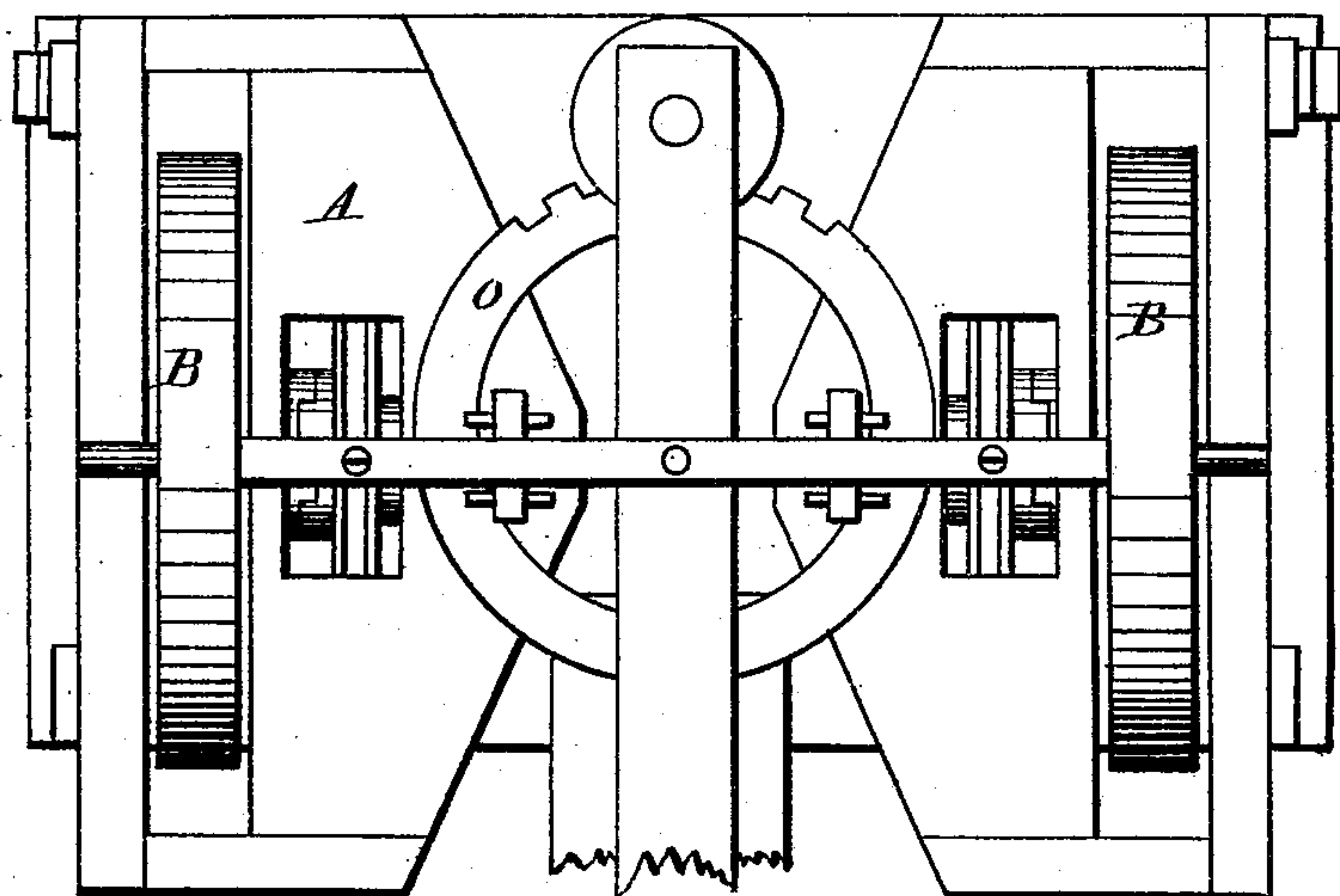


Fig. 4.

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UNITED STATES PATENT OFFICE.

OLIVER A. OLMSTED, OF SEBASTOPOL, CALIFORNIA.

IMPROVEMENT IN TRACTION-ENGINES.

Specification forming part of Letters Patent No. 127,507, dated June 4, 1872.

To all whom it may concern:

Be it known that I, OLIVER A. OLMSTED, of Sebastopol, in the county of Sonoma and State of California, have invented a new and valuable Improvement in Traction-Engines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a horizontal section of my invention. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a front-end view, and Figs. 4 and 5 are details.

This invention has relation to traction-engines, and consists in the construction and novel arrangement of the rolling tracks and propelling devices of an engine adapted to run on common roads or on ordinary ground, and designed for the purpose of conveying freight, drawing agricultural implements, &c.

Referring to the accompanying drawing, A A¹ represent the frame of my improved traction-engine, constructed of any desirable size and strength. B represents the rolling tracks, consisting of large metallic rings with internal toothed flanges, *b*. C designates the main driving-wheels, journaled to transverse shafts *c*. The peripheries of said wheels are constructed with teeth, engaging with those of the flanges *b*, the centers of said driving-wheels being located below the centers of the rolling tracks. The driving-wheels are also flanged, the flanges projecting on either side of the teeth, so as to provide a groove within which the flanges *b* will work, the object being to keep said tracks and driving-wheels together in their proper relations. D designates toothed pinions, attached to transverse shafts *d*, and gearing with the driving-wheels C. E represents pulley-wheels, secured to the shafts *d*, and constructed with either grooves or studed peripheries, to hold belts or chains, F, connecting said pulleys with others attached to the main driving-shaft G. The pulley-wheels E are of larger size than those marked G', and above referred to, so that the speed communicated from one shaft to the other will be increased. The driving-shaft G is actuated

by a steam-engine or other means of giving motion, conveniently located on the frame of the traction-engine. H represents fly-wheels, attached to said shaft. I designates transverse shafts, journaled to the frame A A¹ above the shafts *d*, and holding each a pulley-wheel, J, connected by a belt, J', to a pulley-wheel, K, on the shaft G, and a friction-roller, K', arranged in contact with the periphery of the adjacent rolling track, as shown. These friction-rollers are designed for the purpose of assisting the revolution of the rolling track, as well as for the purpose of keeping them in an upright position. The outer ends of the shafts I have their bearings in hinged bars L, the outer ends of which work in brackets M, attached to the main frame. Springs M' bearing on said bars give the rollers K' their proper degree of friction, and compensate for the wear of said rollers.

The arrangement of the various pulleys and bands may be easily comprehended from the drawing. The object of said devices is to propel the engine at a desirable rate of speed, and with the expense of comparatively slight power. The pulleys and bands are, of course, arranged to turn the rolling tracks and driving-wheels, respectively, in the same direction. The pulley-wheels E may be provided with clutch-boxes *e* on one side, and grooved collars *e*¹ on the other side. The pulleys may be then arranged to slide on their shafts, and to engage with clutch-boxes *e*², on same shafts. By this means, operating-levers *e*³, having forked ends to grasp the grooved collars *e*¹, being used, the pulleys may be thrown in and out of gear, and the machine started or stopped at will without interfering with the motion of the driving mechanism.

As will be seen, the frame A A¹ is constructed in two sections. The forward section A is pivoted to a bar, A², extending forward from the section A¹, so that it may be slightly turned, in order to guide the machine. A ring, O, secured to the bottom, passes through a slot in the bar A² and acts as a "fifth-wheel." The front part of the said ring is toothed, and engages with a pinion, P, on a vertical shaft, P', by the turning of which the guiding of the machine is accomplished. Q is a crank-arm on the upper end of said shaft.

To show the application of this traction-engine to agricultural purposes, a rotary cultivator, consisting of a studded cylinder, is represented at R. This cylinder is supported by vertically-adjustable rods S, at the rear end of the machine, and is driven by means of belts T, passing around the ends of the cylinder, and around pulleys T' on the adjacent shafts δ .

V represents vertical rods, for keeping the pulley-belts passing near them in proper positions.

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

1. The combination and arrangement of the internally-toothed rings or rolling tracks B, driving-wheels C, pinions D, pulleys E G', belts or chains F, and clutches e e^2 , substantially as and for the purpose specified.

2. The combination of the anti-friction roll-

ers K', shafts I, pulleys J K, belts J', and driving-shaft G, with the internally-toothed rings or rolling tracks B, their propelling mechanism, and the pivoted bars L, depressed by springs M', all constructed and arranged substantially as specified.

3. A traction-engine, constructed in two hinged or pivoted sections A A', and provided with the toothed "fifth wheel" O, pinion P, rod P', internally-toothed rolling tracks B, driving-wheel C, pinions D, pulleys E G', and belts or chains F, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

OLIVER AUSTIN OLMSTED.

Witnesses:

B. G. DOUGHERTY,
J. R. WALKER.