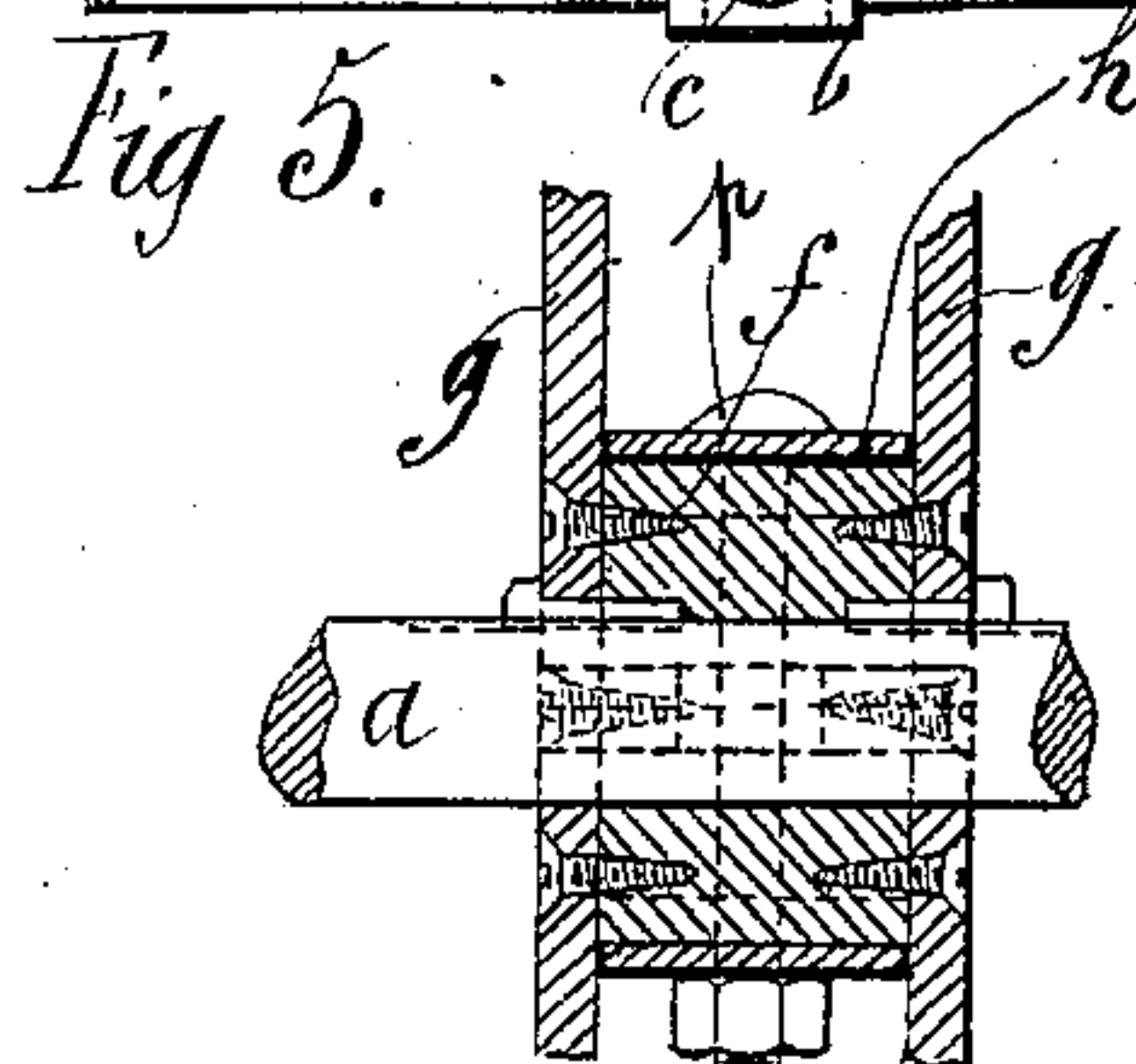
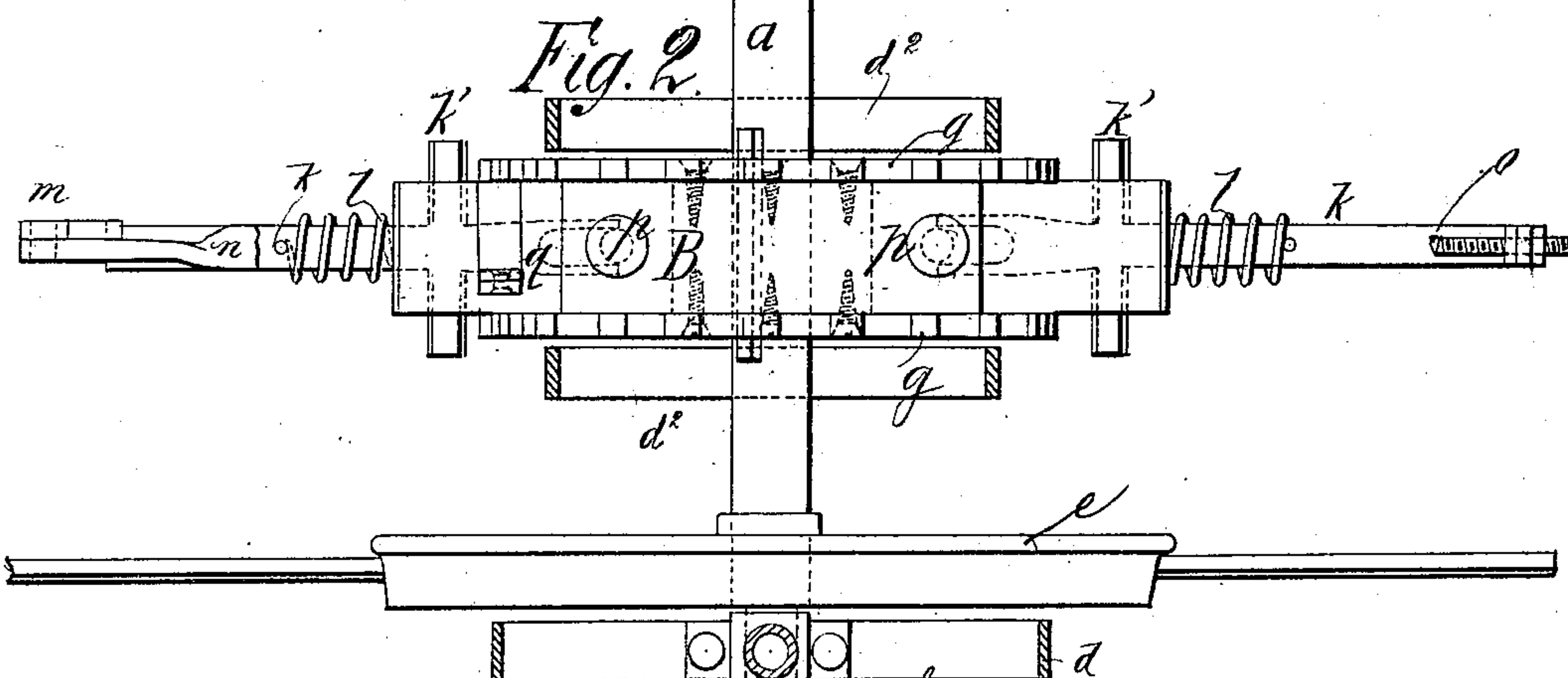
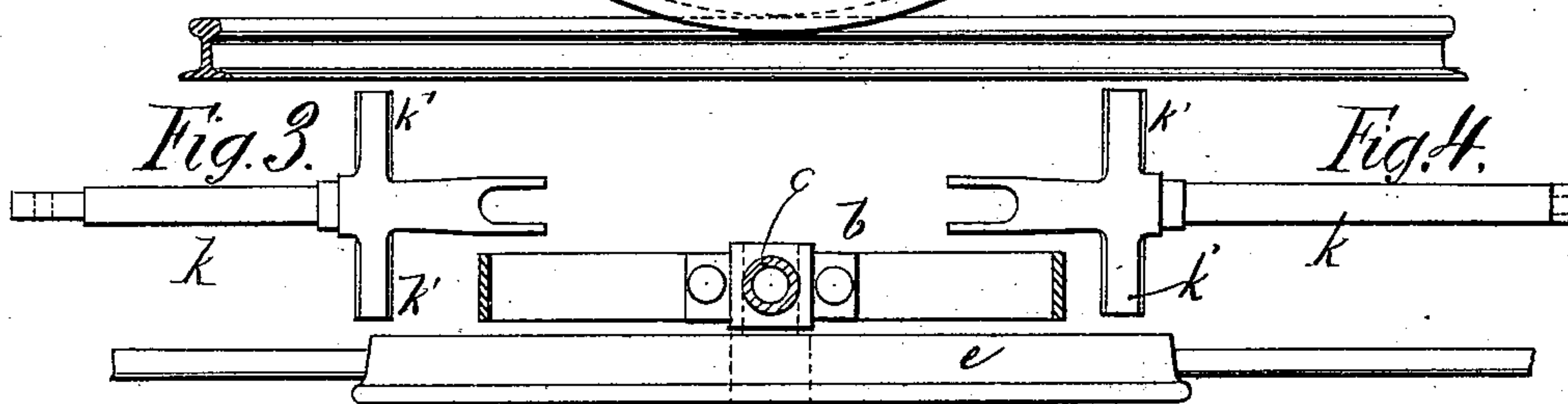
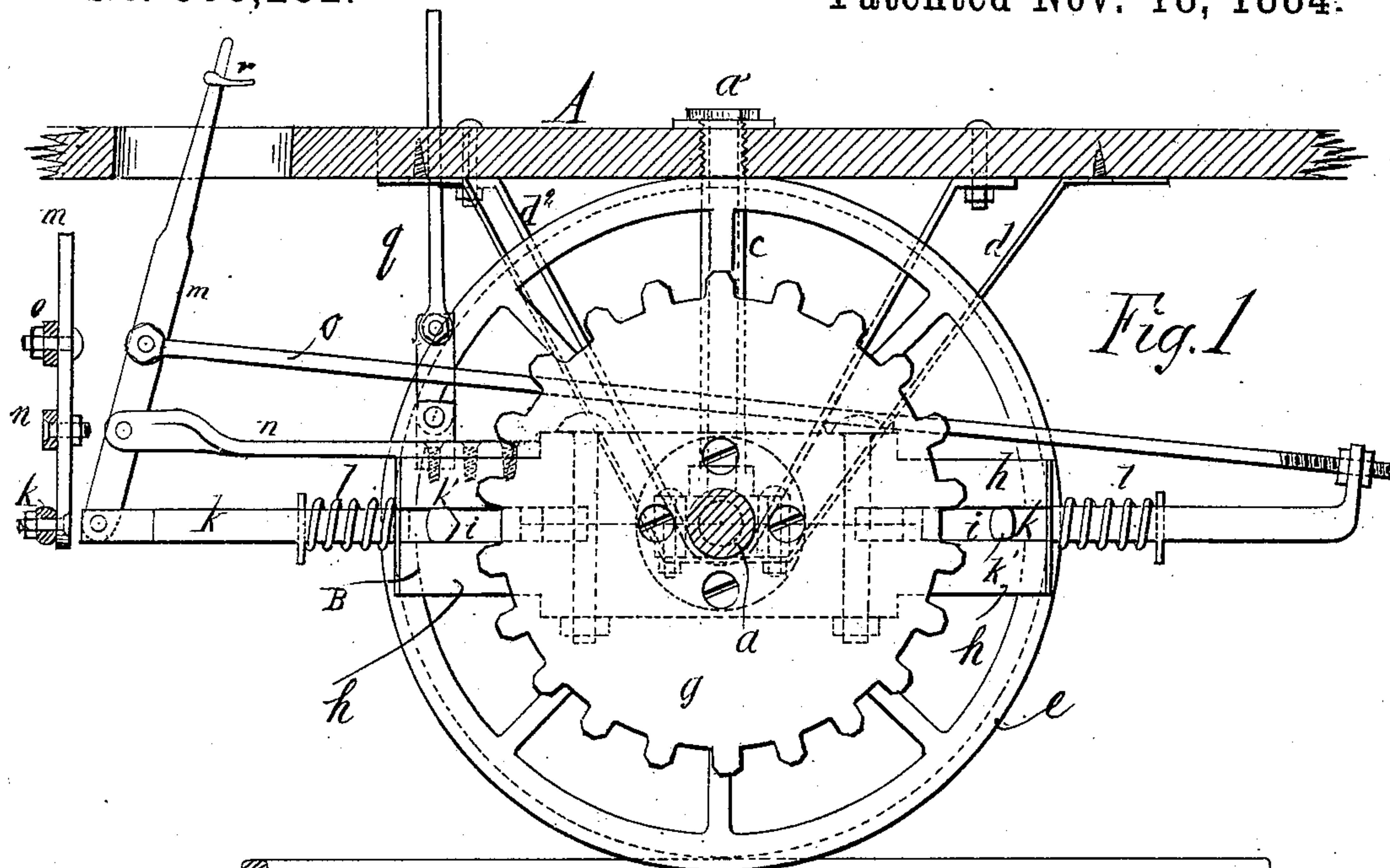


(No Model.)

J. J. ANTHONY.
CAR STARTER.

No. 308,232.

Patented Nov. 18, 1884.



WITNESSES:

J. J. Anthony
C. Bedgwick

INVENTOR:

J. J. Anthony
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ATTORNEYS.

UNITED STATES PATENT OFFICE.

JACOB J. ANTHONY, OF SHARON SPRINGS, NEW YORK, ASSIGNOR TO HIMSELF, AND CHARLES E. BILLINGS, OF HARTFORD, CONNECTICUT.

CAR-STARTER.

SPECIFICATION forming part of Letters Patent No. 308,232, dated November 18, 1884.

Application filed August 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, JACOB J. ANTHONY, of Sharon Springs, in the county of Schoharie and State of New York, have invented a new and Improved Hand and Foot Power Mechanism, of which the following is a full, clear, and exact description.

The object of my invention is to provide mechanism that can be operated by hand and foot for the development of power, the power to be applied for any purposes—such as the stopping and starting of cars, the operation of fire-engines, &c. To that end my invention consists in the compound lever and ratchet mechanism hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

The drawings show the invention as applied for stopping and starting cars.

Figure 1 is a sectional side view. Fig. 2 is a plan view of the parts below the car-body. Figs. 3, 4, and 5 are detail views.

A represents the bottom of a car. *a* is one of the axles supporting the car by boxes *b* at the lower ends of rigid pedestals *c*. The pedestals *c* are tubular, and extend through the car-bottom, and their upper ends are closed by caps *a'*, so the tubes can be filled with oil, and thus serve as a reservoir for supplying the boxes. *d d* are braces from the boxes to the car-bottom, and *e e* are the car-wheels. *d'* are inner braces for supporting the axle against strain in working the machine.

Upon the axle *a* is fixed a hub, *f*, to which two straight-toothed ratchet-wheels, *g g*, are attached by screws entering the hub; or, in cases where the mechanism is to be applied to the axles or shafts in use, the ratchet-wheels may be cast in halves with half-hubs, and with flanges on the joint-line for securing them together on the axle. Upon the hub *f*, as a fulcrum, is hung a lever, B, which is formed of wood or metal, and consists of two bars, *h*, formed to set on the hub at opposite sides and bolted together, so that while the lever is held on the hub it can rock freely thereon. The ends of lever B project beyond the ratchet-wheels, and are formed with horizontal slots

i. *k k* are dogs, made in the form of straight rods, with side lugs or extensions, *k'*, that extend through the slots *i* and out at the opposite sides of lever B. *l l* are spiral springs upon the dogs *k*, between pins on the dogs and the ends of lever B, so that the springs tend to force the dogs outward. *m* is a hand-lever hung on the end of a rigid bar, *n*, attached to lever B, with the upper end extending through the car-bottom to a convenient position for operation from the platform, while the lower end of this lever *m* is jointed to the end of one dog *k* below. *o* is a rod jointed to lever *m* above its fulcrum, and passing over lever B to the outer end of the other dog, to which it is connected. The inner ends of the dogs *k* are slotted to pass upon the vertical bolts *p*, connecting the two parts *h* of lever B, so that the bolts serve to guide the dogs and prevent lateral movement. A guide-rod, *q*, hinged to lever B, passes up through the car-bottom, so as to brace the lever sidewise. *r* is a foot-piece on lever *m*.

To start a car fitted with this mechanism, lever *m* is first grasped by the hands and lifted, thereby raising that end of the lever B and lowering the opposite end. The lever *m* is then pushed forward to cause the inward movement of dogs *k* and their engagement with the ratchet-wheels, and the operator then, placing his foot on piece *r*, throws his weight on lever *m*, so as to cause a downward movement and the rotation of the ratchet-wheels and axle. As soon as lever *m* is released the springs *l* move the dogs outward and free from the ratchet-wheels, and the operation is repeated.

In this manner street-cars can be started, and when under way can be stopped by causing the dogs to engage the ratchet-wheels, thereby stopping the rotation. The device can also be used with steam-cars for making up trains, and thereby dispensing with the locomotive generally used.

It is evident that this power mechanism can be applied for rotating a shaft and connections made from the shaft for driving machinery. It can also readily be fitted for operating fire-engines.

A tank may be built or carried on platform

A for carrying a supply of water, and the rod shown at *g* connected to pumps, so that the pumps will be operated by movement of lever *k*, and the apparatus thus serve as a hand fire-engine. The platform and tank may be made of either wood or iron.

By using two ratchet-wheels and making the lever B compound the strain is balanced in all parts of the mechanism. A single ratchet-wheel may be used and the lever slotted to pass at each side of the wheel.

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

1. The power mechanism consisting of a compound lever, B, the sliding dogs *k*, ratchet-wheels *g*, hand-lever *m*, and connecting-rod *o*, substantially as described, combined for operation as specified.

2. In hand-power mechanism, the combination, with a shaft provided with ratchet-wheels, of a lever fulcrumed on the shaft, dogs *k*, fitted for movement on the lever for engaging the ratchet-wheels, and a hand-lever connected to the main lever and to the dogs for their operation, substantially as described.

3. The car-starter consisting of lever B, dogs *k*, ratchet-wheels *g*, and hand-lever *m*, combined together with a car-axle, substantially as described.

JACOB J. ANTHONY.

Witnesses:

SPENCER HYNEY,
JACOB HARPER.