

(No Model.)

J. BEGTRUP.
ENGINE GOVERNOR.

No. 510,314.

Patented Dec. 5, 1893.

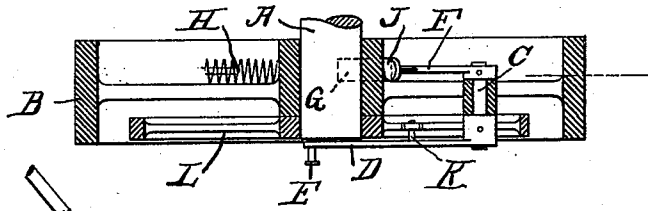


Fig. 2.

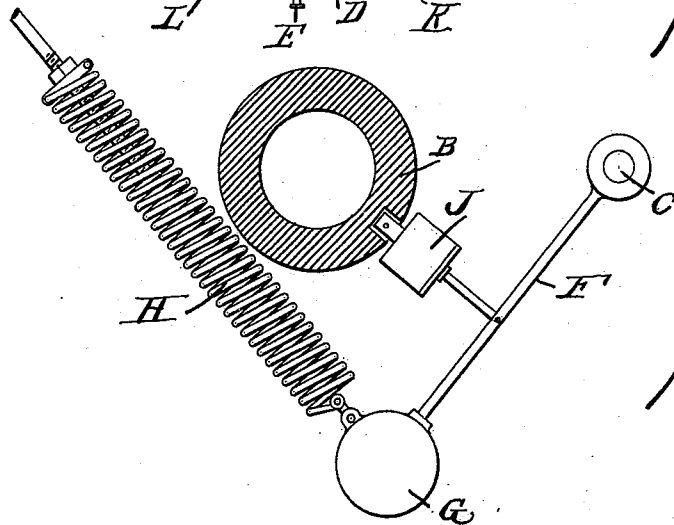


Fig. 3.

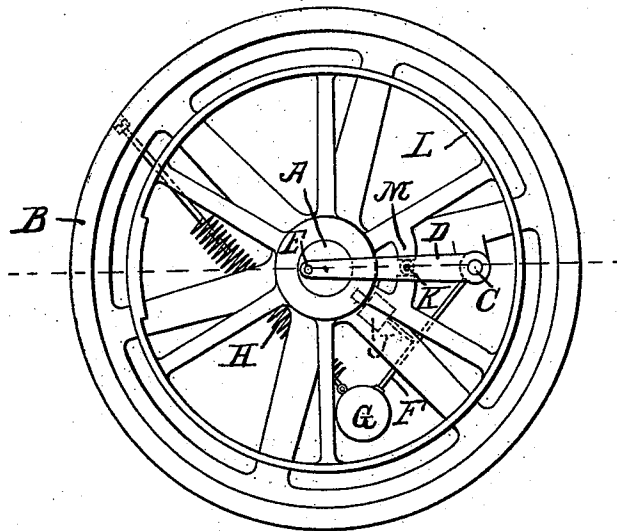


Fig. 1.

Julius Begtrup

Inventor

by *James M. See*

Attorney

Witnesses:

P. P. Sheehan

Lazarus

UNITED STATES PATENT OFFICE.

JULIUS BEGTRUP, OF RIDGWAY, PENNSYLVANIA, ASSIGNOR TO JAMES H. McEWEN, OF SAME PLACE.

ENGINE-GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 510,314, dated December 5, 1893.

Application filed January 4, 1893. Renewed October 6, 1893. Serial No. 487,393. (No model.)

To all whom it may concern:

Be it known that I, JULIUS BEGTRUP, of Ridgway, Elk county, Pennsylvania, have invented certain new and useful Improvements in Engine-Governors, (Case C,) of which the following is a specification.

This invention pertains to improvements in that class of engine governors carried by the main shaft and known as "shaft-governors." My improvements will be readily understood from the following description taken in connection with the accompanying drawings, in which—

Figure 1, is a face view or elevation of a governor exemplifying my present invention; Fig. 2, a horizontal diametrical section of the same; and Fig. 3, an elevation of the weight-arm spring, and dash-pot, the hub of the wheel appearing in vertical section.

In the drawings:—A, indicates the engine-shaft; B, a wheel fast thereon and forming, so far as the governor is concerned, a mere carrier for the governor; C, a pivot journaled in the wheel eccentric to and parallel with the shaft; D, an arm fast on one end of this pivot and reaching inwardly; E, the eccentric, carried by the inner end of this arm; F, an arm secured to the opposite end of pivot C; G, a centrifugal-weight rigidly attached to said arm; H, a spring engaging said weight and the wheel and tending to hold the weight inwardly against the outward tendency of centrifugal forces; J, a dash-pot, with its axis arranged radial to the wheel and having its cylinder pivoted to the hub of the wheel while the outer end of its piston-rod is pivoted to arm F; K, a roller-stud rigidly attached to and projecting inwardly from arm D; L, an inertia-weight having, in the exemplification, the form of a wheel and mounted for free rotation through a slight arc on the engine-shaft; and M, jaws in this inertia-weight between which engages the roller-stud K, the arrangement being obviously such that the movement of inertia-weight L, with reference to the wheel, causes the rocking of arm D.

Under the action of centrifugal force, weight G moves outwardly, when increase of speed causes centrifugal force to exceed the restraining power of the spring, and the eccentric thereby becomes shifted to new posi-

tion, appropriate to a reduction in speed of the engine. The wheel and the inertia-weight L being in rotation, at any speed, the inertia-weight is adverse to a change in its speed of motion, and the rocking of arm D will necessarily compel the inertia-weight to move either a trifle ahead or behind in its relationship to the wheel, thus, at the instant, calling upon the inertia-weight to change its speed of rotation. If engine speed increases then the inertia-weight will for an instant seek to lag in its motion, its inertia making it adverse to the quickening of speed. Therefore the inertia-weight serves, of itself, as an agent for the shifting of the eccentric and it also serves as a corrective agent with reference to the action of the centrifugal-weight, the inertia-weight being entirely willing, after it has taken a new position with reference to the wheel, to remain in that position after the wheel has resumed normal speed. It will be observed that the inertia-weight and eccentric arm D and weight arm F are rigidly united at the roller-stud K without the interposition of links or other relatively moving contrivances. The dash-pot J permits of the proper motion of the parts when the forces act with due deliberation but guards against disturbing oscillations of the centrifugal weight.

I claim as my invention—

1. In a steam engine governor, the combination, substantially as set forth, of a rotary carrier, an inertia-weight carried thereby with its axis of rotation coincident with that of the carrier, and a rigidly united centrifugal-weight and eccentric connected therewith.

2. In an engine governor, the combination, substantially as set forth, of a rotary carrier, an inertia-weight carried thereby with its center of rotation coincident with that of the carrier, and an eccentric and centrifugal-weight connected therewith and mounted for oscillation upon a common pivot carried by the carrier eccentric to the center of rotation of the carrier.

JULIUS BEGTRUP.

Witnesses:

J. J. EWING,
H. W. FITZGERALD.