

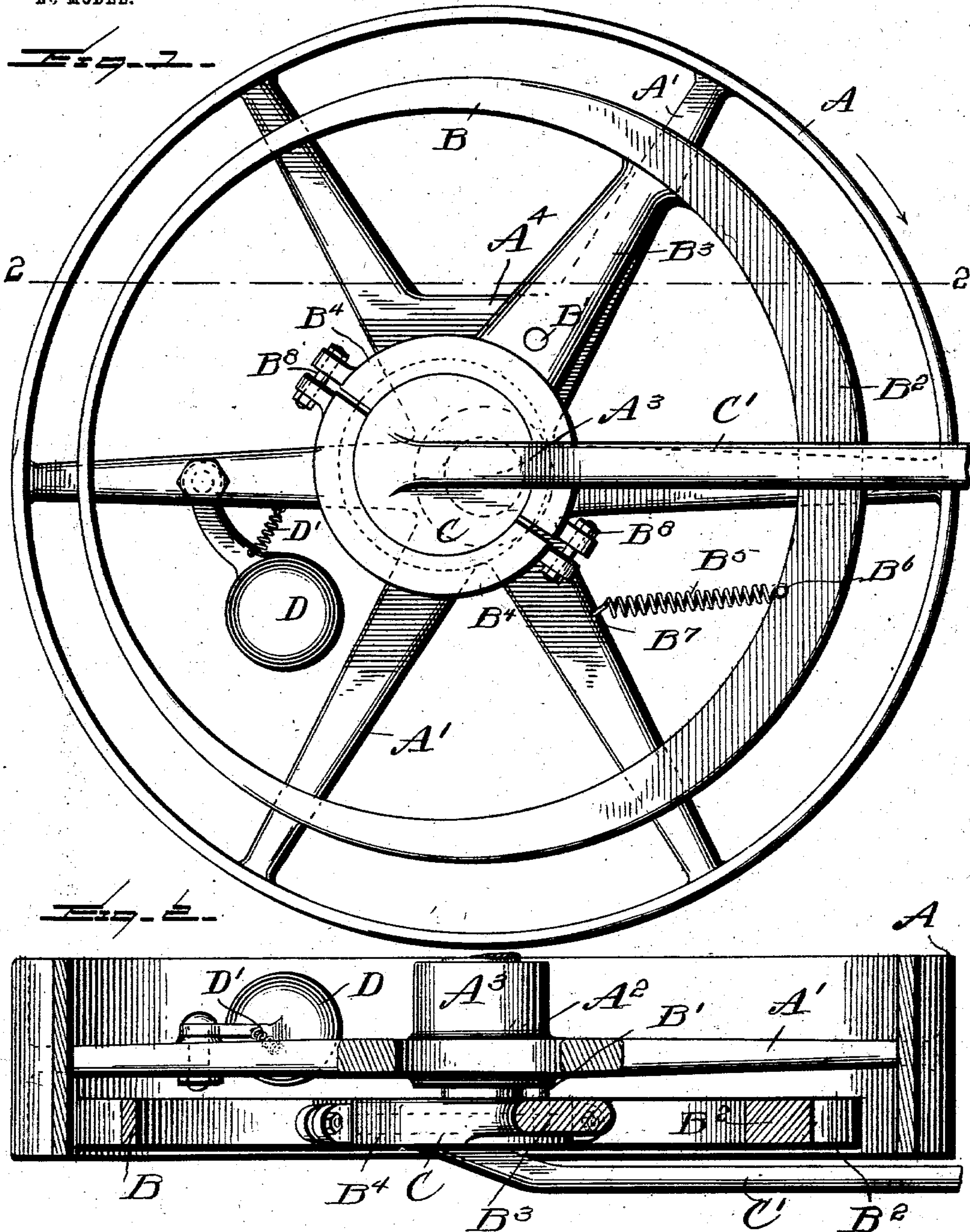
No. 730,472.

PATENTED JUNE 9, 1903.

C. R. MCGAHEY.
ENGINE GOVERNOR.

APPLICATION FILED AUG. 11, 1902.

NO MODEL.



WITNESSES

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ENGINE-GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 730,472, dated June 9, 1903.

Application filed August 11, 1902. Serial No. 119,341. (No model.)

To all whom it may concern:

Be it known that I, CALVERT R. MCGAHEY, a citizen of the United States, residing at Elkton, in the county of Rockingham, State of Virginia, have invented certain new and useful Improvements in Engine-Governors, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an engine-governor, and particularly to a structure involving a weight carried upon the fly-wheel thereof.

The invention has for an object to provide an annular weight or cam mounted upon a fly-wheel eccentrically to the axis thereof and having a valve connection extending beyond the pivoting-point of the weight, so as to travel in an arc when actuated by the shifting of the weight.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined specifically by the appended claims.

In the drawings, Figure 1 is an elevation of the governor applied to a fly-wheel, and Fig. 2 is a cross-section on the line 2-2 of Fig. 1.

Like letters of reference refer to like parts in the several figures of the drawings.

The letter A designates a fly-wheel of any desired construction, provided with the usual spokes A', which terminate in a hub A², mounted upon a driving-shaft A³. Upon this wheel and eccentrically to the shaft A³ a governor-ring B is pivotally mounted by means of a pivot B', extending through any desired part of the wheel—for instance, a web A⁴, cast thereon for that purpose. The ring B is in the form of a cam and provided at one side with a weighted portion B², while extending radially inward therefrom is a pivoting-arm B³, through which the pivot B' passes, while beyond this arm a strap B⁴ is provided and adapted to engage a head C, carried by the valve-rod C'.

For the purpose of restraining the movement of the weighted cam B the same may be connected to a spoke or other fixed part of the wheel A by means of a tension-spring B⁵, which is herein shown as connected at one end B⁶ to the portion B² of the ring and at the op-

posite end B⁷ to a spoke of the wheel. If desired, the strap B⁴ may be made in two or more parts and connected together by bolts B⁸, as usual in this art.

The use of the cam-ring disposes a greater amount of weight upon one side of the fly-wheel than the other, and to compensate for this a pivoted weight D is provided, which is mounted upon a spoke or fixed part of the wheel, preferably adjacent to the hub, and is provided with a restraining-spring D', adapted to be placed under tension as the weight moves outward from its pivot. This weight and spring are entirely independent of the swinging governor formed by the pivoted ring and is intended to compensate for the shifting of the weight upon the fly-wheel due to the operation of the governor, thereby securing a perfectly-balanced wheel, which materially improves the running of the engine and the general efficiency thereof.

In the operation of the invention it will be seen that if the fly-wheel is rotating from left to right the weight is carried thereby at an equal speed, the valve at such time being in its normal open position. If the speed of the fly-wheel be retarded by increasing the load upon the engine or otherwise, it will be seen that the momentum of the ring will cause it to continue its movement and by swinging upon its pivot carry the strap thereof in the path of an arc to properly operate the valve through the rod connection C'. Likewise if the speed of the fly-wheel be materially increased beyond the adjusted position of the weight the latter will be retarded in its movement and shift to operate the valve in the opposite direction to that first stated. The disposition of the valve-connecting strap at one side of the pivot of the weighted ring causes this strap to travel in an arc traversing the axis of the fly-wheel, and thus secures a direct pull upon the valve-rod and dispenses with all connecting-gears and extraneous parts, requiring only a few parts, simple in construction and operation, to secure the most efficient results. One form of connection with the valve-rod has been shown; but any desired form may be used as found preferable.

It will be obvious that changes may be made in the details of construction and configuration without departing from the spirit of the invention as defined by the appended claims.

Having described my invention and set forth its merits, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a vertically-disposed fly-wheel, of a governor-ring encircling the axis of said wheel and having one sector thereof of greater weight than another, an inwardly-extending radial pivoting-arm disposed in alinement with the axis of the wheel, a pivot for mounting said arm between its ends upon said fly-wheel eccentrically to the wheel-axis to provide a free end to oscillate across the wheel-axis, and a valve connection at said free end; substantially as specified.
2. The combination with a fly-wheel, of an annular governor-weight having an inwardly-extending pivoting-arm, a pivot for mounting said arm upon said wheel, a valve connection at one side of said pivot, and a balancing-weight and spring mounted upon the wheel independent of the annular weight; substantially as specified.
3. The combination with a fly-wheel, of an annular governor-weight having an inwardly-extending pivoting-arm, a pivot for mounting said arm upon said wheel, a valve connection at one side of said pivot, a balancing-weight and spring mounted upon the wheel independent of the annular weight, and a retarding-spring extending between the wheel and the

weighted portion of said governor-weight; substantially as specified.

4. In an engine-governor, the combination of a fly-wheel, a governing-weight comprising a cam-ring of gradually-increasing diameter from its thinnest to its thickest portion and having an inwardly-extending arm pivoted to said wheel eccentrically to the axis of the wheel, a valve connection carried by the inner end of said arm, a balancing-weight upon the wheel adjacent to the thinnest portion of the ring, and a retarding-spring extending between said wheel and ring; substantially as specified.

5. In an engine-governor, the combination of a fly-wheel, a governing-weight comprising a cam-ring having an inwardly-extending arm pivoted to said wheel eccentrically to the axis of the wheel, a strap carried by the inner end of said arm, a valve connection adapted to fit within said strap, a retarding-spring extending between said wheel and weight, a shifting balancing-weight carried by the wheel adjacent to its hub and upon the opposite side of the weighted portion of said ring, and a retarding-spring extending from said weight to a fixed portion of the wheel; substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

CALVERT R. MCGAHEY.

Witnesses:

J. A. MCGAHEY,

J. O. GIBSON.