Feb. 5, 1924.

1,482,547

B. A. DELL

GOVERNOR FOR INTERNAL COMBUSTION ENGINES

Filed March 26, 1920

Fig. 1.

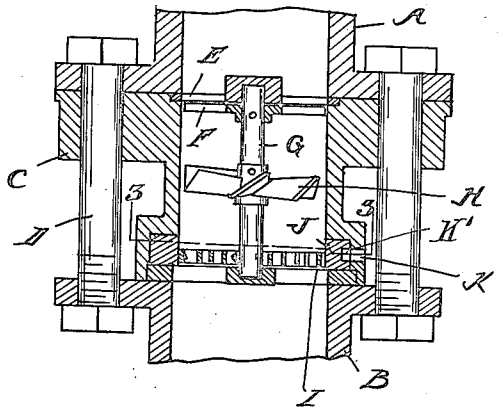
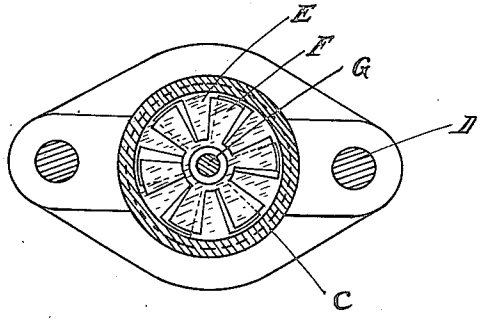


Fig. 2.



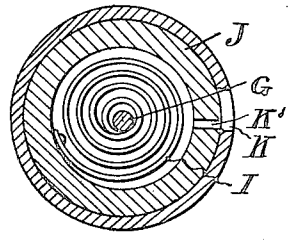


Fig. 3.

Inventor

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By Whittemore Hulbert & Whittemore

Attorneys

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UNITED STATES PATENT OFFICE.

BRADFORD A. DELL, OF DETROIT, MICHIGAN, ASSIGNOR TO MONARCH GOVERNOR COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

GOVERNOR FOR INTERNAL-COMBUSTION ENGINES.

Application filed March 26, 1920. Serial No. 369,000.

To all whom it may concern:

Be it known that I, BRADFORD A. DELL, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Governors for Internal-Combustion Engines, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to governors of that type in which the throttle is moved towards closing position upon an increase in the velocity of the gas and is opened by the tension of a counter-acting spring. It is the object of the invention to obtain a simple construction of operating mechanism which responds to the variation in velocity of gas and which avoids cutting down the power of the engine through permanent restriction. To this end the invention consists in the construction as hereinafter set forth.

In the drawings:

Figure 1 is a central longitudinal section through the governor;

Figure 2 is a cross-section thereof;

Figure 3 is a sectional view taken on line 3—3 of Figure 1.

My improved construction preferably comprises a throttle formed of relatively revoluble register plates arranged across the intake in a plane transverse to the longitudinal axis thereof. The movable register plate is connected to one or more obliquely arranged wings, which under the influence of the passing stream of gas will rotate in a direction to close or restrict the area, while the spring opposing this movement holds the throttle normally open. In detail, A is the intake manifold, B the carburetor casing, and C the governor casing arranged between the manifold and carburetor and secured thereto by clamping bolts D. E is a stationary register plate arranged across the passage in the casing C and having segmental openings therein of sufficient area for the passage of the maximum volume of gas. F is the co-acting register plate, which is revoluble in relation to the plate E so as to close or restrict the open areas thereof. The plate F is mounted upon a shaft G extending centrally and longitudinally of the conduit and upon this shaft are mounted the obliquely arranged wings or blades H. There is also connected to the shaft a counter-acting spring I, which as shown is in the form of a spiral, one end being attached to the shaft and the other anchored to the casing.

With the construction described, the tension of the spring I may be suitably adjusted, preferably by anchoring it to a rotatively adjustable ring J located within the casing C. The ring J is preferably provided with a peripheral recess K′ which registers with a slot K in the casing and which is adapted to receive a suitable tool (not shown) for adjusting the ring whereby the tension of the spring I may be regulated. When the spring is properly set, it will maintain the register plate F in position for maximum opening of the throttle until the velocity of gas passing through the conduit exceeds a predetermined limit. When this occurs, the torque imparted to the shaft G from the obliquely arranged blades H will move the plate F towards closing position, thereby restricting the open area and cutting down on the power and speed of the engine.

The construction has the advantage of great simplicity and avoids the placing of more than one restriction in the intake conduit, so that the maximum power of the engine is not cut down as is the case with certain other governor constructions.

What I claim as my invention is:

The combination with the intake conduit of an internal combustion engine, of a throttle therein comprising cooperating register plates, one plate being movable, a shaft for said movable plate, an annular member in said conduit and concentric to the axis of said shaft, a spring within said annular member and connected thereto, said spring being also connected to said shaft and normally retaining said movable plate in open position, and means on said shaft adapted to be operated by the increased velocity of the fluid passing through said conduit for actuating said movable plate towards closed position, said conduit having a slot therein, said annular member having a recess therein registering with said slot and adapted to receive a tool for adjusting said annular member whereby the tension of said spring may be regulated.

In testimony whereof I affix my signature.

BRADFORD A. DELL.