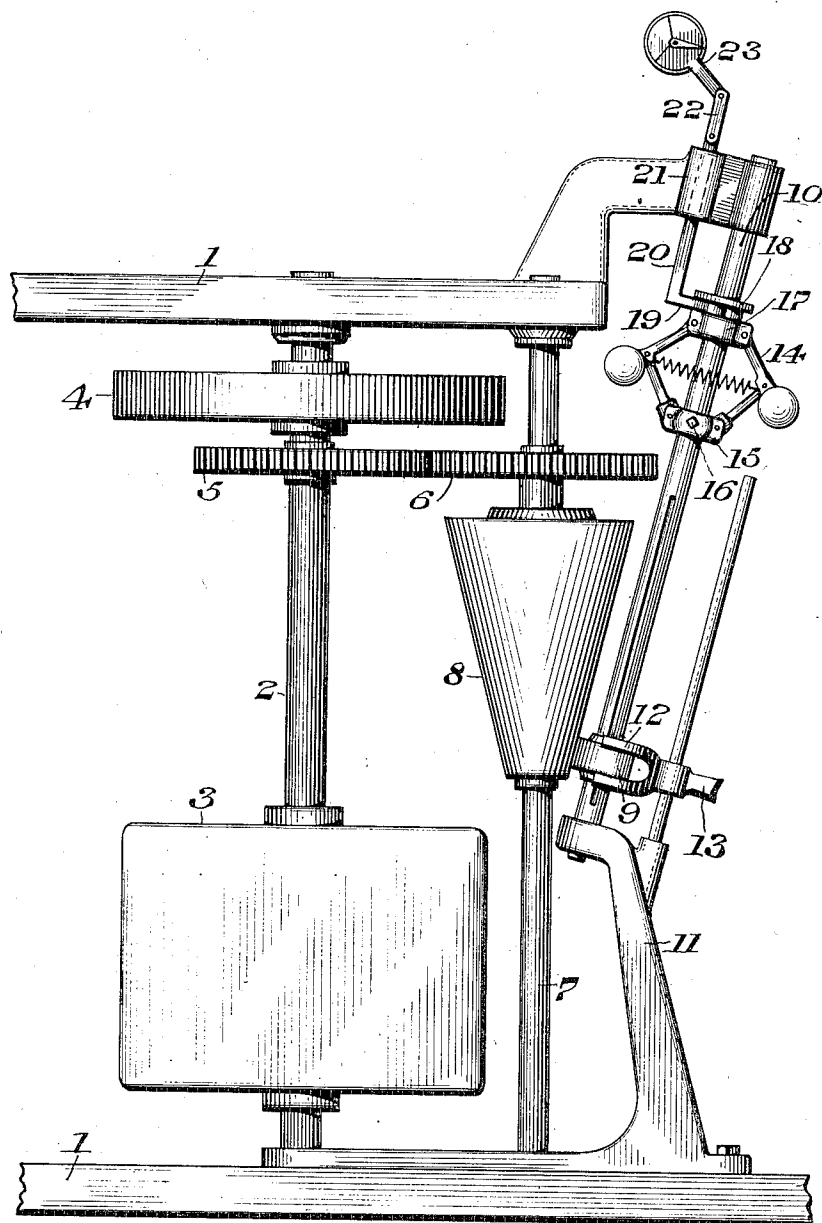


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A. A. KENT.
GOVERNOR.

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GOVERNOR.

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To all whom it may concern:

Be it known that I, ARTHUR ATWATER KENT, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Governor for Automobile-Engines, of which the following is a specification.

My invention consists of a novel construction of governor which is especially adapted for use in connection with automobile or other engines and comprises novel means for manually and mechanically regulating the position of a friction-wheel with respect to a friction-cone, whereby any desired speed will be caused to remain substantially constant and the flow of the explosive material to the engine will be controlled in the most positive manner, with an accurately-timed action and a delicate apportionment of quantity to load.

It further consists of a novel construction of friction-cone and friction-wheel adapted to coact therewith, said friction-wheel being mounted upon a governor-shaft having connections leading therefrom to the throttle device employed.

It further consists of novel features of construction, all as will be hereinafter fully set forth.

The figure represents a plan view of a governor embodying my invention, the same being shown in assembled position.

Similar numerals of reference indicate corresponding parts in the figure.

Referring to the drawing, 1 designates the frame or housing, in which is journaled a driving-shaft 2, having mounted thereon an engine or motor 3 of any suitable or conventional construction, and a fly-wheel 4.

5 designates a gear fixed to the shaft 2 and adapted to coact with a gear 6, fixedly mounted on a shaft 7, which latter is journaled in suitable bearings in the frame 1.

8 designates a friction-cone secured to the shaft 7 and with which the friction-wheel 9 is adapted to engage.

10 designates a shaft suitably supported and extending at an angle to the shaft 7, corresponding to the slope of the cone. One end of said shaft has a bearing in a standard 11 or its equivalent, the other end of said shaft being also suitably supported in any desired manner and connected to other mechanism, (not shown,) if desired. Said shaft 10 has keyed or splined thereon the friction-wheel 9.

12 designates a clutch adapted to engage

the friction-wheel 9 and mounted on a suitable guide for the handle 13 of the shifting mechanism, which handle is adapted to be manually controlled.

14 designates a governor provided with a collar 15, fixed to the shaft 10 by means of a set-screw 16 or similar device and also provided with a sliding collar 17, having a groove 18 therein, with which the arm 19 of the bent rod 20 has engagement.

21 designates a bearing or journal in which the rod 20 is movably mounted. 20 has connected at its other end one end of a link 22, the other end of said link being connected to a throttle mechanism 23.

The operation is as follows: The rotation of the engine-shaft 2 is imparted to the shaft 7 and its adjuncts by the gears 5 and 6. The friction-wheel 9 having both rotatable and longitudinal movement, it will be apparent that the position of the said wheel with respect to the friction-cone 8 is varied as the speed of the governor varies. The friction-wheel 9 being manually operated may be moved so as to coact with any desired portion of the lesser, greater, or intermediate surface of the friction-cone, which will consequently vary the speed with which the shaft 10 rotates and the position of the loose collar of the governor mounted on the shaft will be correspondingly varied. As the speed of the governor varies the sliding collar 17 will advance or retreat on the shaft 10, and as the rod 20 has engagement therewith and also with the throttle mechanism 23 it is apparent that any change in the position of the sliding collar 17 with respect to the shaft 10 will cause the throttle mechanism 23 to be opened or closed, as the case may be. In governors for automobiles as heretofore generally constructed there has been considerable difficulty in regulating the speed of the engine when the automobile is traveling downhill. In my present novel construction the position of the friction-wheel 9 with respect to the cone 8 may be manually or mechanically varied at will, so that any desired speed will be substantially constant. If any variation occurs, the governor will cause the sliding rod 20 to actuate the throttle mechanism, so as to regulate the admission of the explosive mixtures to the engine. It will be apparent that I obtain the same result if I fix the cone 8 on the driving-shaft 2 as I do when I employ the intermeshing gears 5 and 6 and mount the cone 8 on the shaft 7

and I consider this to be an equivalent construction to that shown and described.

It will be apparent from the foregoing that by the novel combination of the friction-wheel 9, splined to the shaft 10 and adapted to coact with the friction-cone 8, I am enabled to obtain the desired result, a simple construction and arrangement of the parts which are readily accessible for the purpose of inspection and repair at all times. It will further be apparent that I am enabled by my novel construction to manually and mechanically set the friction-wheel 9 in substantially the desired position or to vary the same mechanically with respect to the friction-cone, so that any desired speed will be substantially constant, since if any variation occurs the governor will cause the sliding rod 20 to instantly actuate the throttle mechanism so as to regulate the admission of the explosive mixtures in the engine. It will also be apparent that the shaft 10 and the bearing 21 and its adjuncts may be supported from any fixed point in any suitable manner, according to requirements, and that various changes in the manner of assembling the parts may be made without departing from the spirit of my invention.

It will be evident that I have omitted from the drawing various details relating to the internal construction of the engine and governor and their adjuncts, since the same are familiar to those skilled in the art and form *per se* no part of the present invention.

It will be apparent that while I have shown as one embodiment of my invention a cone and friction-wheel for changing the ratio of speed of the shafts 7 and 10 I do not desire to be limited in every instance thereto, since it will be apparent that I may employ in lieu thereof any speed-changing device, such as two cones and a belt or a friction disk and wheel or the like or any other equivalent construction familiar to those skilled in the art.

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

1. The combination of a motor, a friction-cone actuated in unison therewith, a rotatable shaft, a friction-wheel carried on said shaft and capable of longitudinal movement thereon, a throttle mechanism, and governing devices intermediate said throttle mechanism and friction-wheel.

2. The combination of throttle mechanism for an engine or motor, a friction-cone, means for actuating said cone, a rotatable shaft, a friction-wheel carried on the latter, and capable of longitudinal movement thereon, and governing devices intermediate said throttle mechanism and friction-wheel.

3. In a device of the character described, a throttle mechanism, a driving member, a friction-cone driven thereby, a friction-wheel

adapted to engage said cone, a shaft on which said friction-wheel is mounted and has longitudinal movement, a governor mounted on said shaft, and having a sliding member and means intermediate said member and mechanism, whereby constant speed is maintained in the engine.

4. In a device of the character described, a driving-shaft, a gear mounted thereon, a second shaft, a gear suitably mounted thereon and adapted to coact with said first-mentioned gear, a friction-cone mounted on said second shaft, a friction-wheel adapted to coact with said friction-cone, a shaft on which said friction-wheel is splined, a governor on said shaft to actuate the controlling mechanism and means for manually adjusting said friction-wheel with respect to said friction-cone.

5. In a governing device, of the character described, a driving-shaft, a driven shaft, speed-changing mechanism carried by said shafts, means for manually adjusting said speed-changing mechanism, a governor mounted on said driven shaft and having a sliding member, a throttle mechanism and a connection intermediate said sliding member and throttle mechanism for actuating the same in unison.

6. The combination of a driving-shaft, a driven shaft having a cone thereon, gearing intermediate said shafts, a third shaft inclined to said first-mentioned shafts, a friction-wheel splined thereto, means for mechanically operating said friction-wheel, a governor mounted on the shaft carrying said friction-wheel, and having a sliding member; a throttle mechanism, and connections intermediate the latter and said sliding member.

7. The combination of a motor, a cone actuated thereby, a shaft mounted in suitable bearings, a friction-wheel splined to said shaft, means for mechanically operating said friction-wheel, a governor mounted on the shaft carrying said friction-wheel and having a sliding member, a throttle mechanism, connections intermediate said sliding member and throttle mechanism, and means for guiding and supporting said connections.

8. The combination of a motor, a shaft 10, speed-changing mechanism intermediate the latter and said motor, means for normally adjusting a member of said speed-changing mechanism, a governing device mounted on said shaft 10, and having a sliding member 17, a guide 21, a rod 20 movable in said guide and in engagement with said member 17, a throttle mechanism, and a link 22 intermediate said rod and throttle mechanism.

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Witnesses:

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