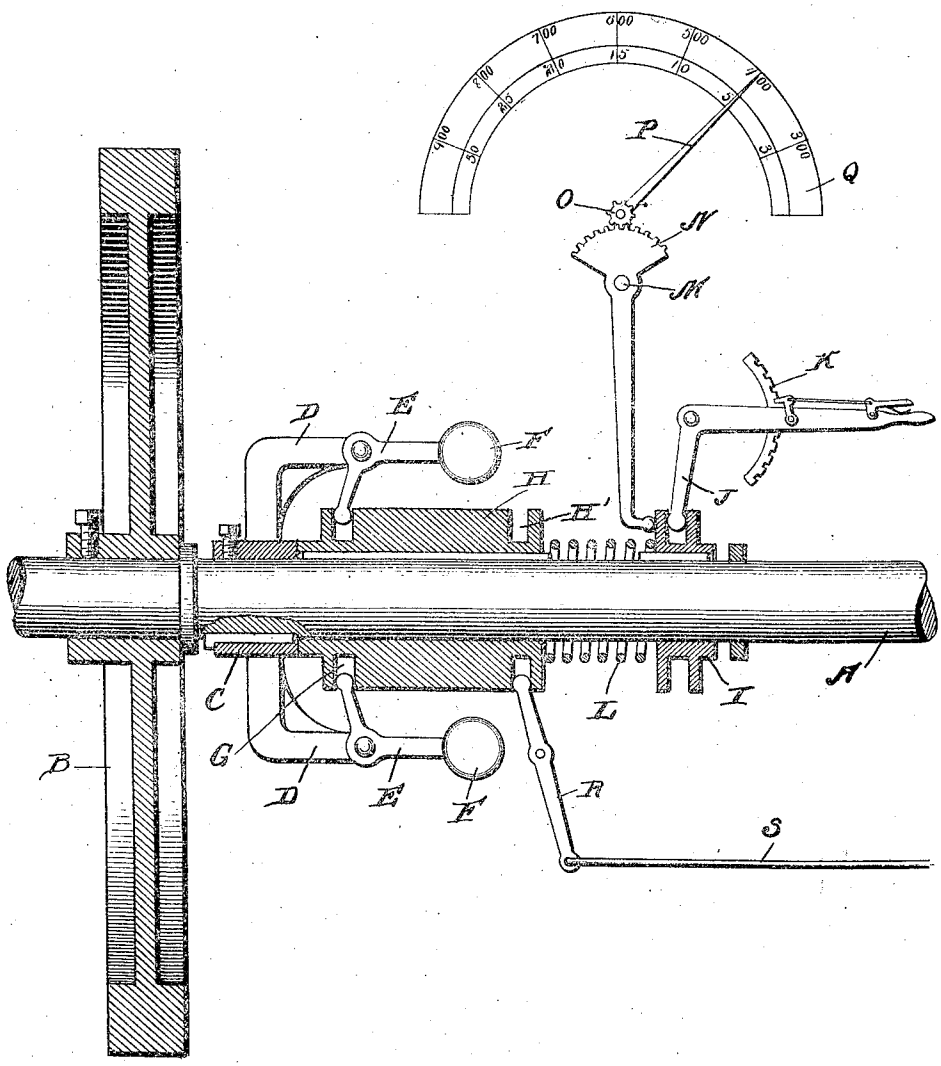
No. 757,269. PATENTED APR. 12, 1904.

G. W. CASTEEL.

VARIABLE SPEED GOVERNOR

APPLICATION FILED MAY 6, 1903.

NO MODEL.



Witnesses:
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No. 757,269. Patented April 12, 1904.

UNITED STATES PATENT OFFICE.

GEORGE W. CASTEEL, OF TEXARKANA, TEXAS.

VARIABLE-SPEED GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 757,269, dated April 12, 1904.

Application filed May 6, 1903. Serial No. 155,811. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. CASTEEL, a citizen of the United States, residing at Texarkana, county of Bowie, and State of Texas, have invented a certain new and useful Improvement in Variable-Speed Governors, of which the following is a specification.

My invention relates to a new and useful improvement in variable-speed governors for motor-vehicles, and has for its object to provide a governor by which the speed of the vehicle can be increased or diminished without stopping the motor, and the same hand which indicates the revolutions of the motor also indicates the speed per hour the vehicle is traveling.

This appliance is applicable to all forms of motor-vehicles, either steam, electric, or gas engines driven motors, but is particularly adapted to the latter class.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawing, forming a part of this specification, in which is represented a longitudinal sectional view through the balance or fly wheel and the sleeves upon the driving-shaft, the balance of the mechanism being shown in diagram.

A represents the driving-shaft, and B the balance or fly wheel secured thereon.

C is a collar secured upon the driving-shaft rigidly and adapted to revolve therewith. Extending outward from opposite sides of this collar are the right-angle arms D, to the ends of which are pivoted the bell-crank levers E. To the end of one member of each of the bell-crank levers are secured weights or balls F, which are adapted to act as usual in governors and be thrown outward by centrifugal motion. The ends of the other members of the bell-crank levers E lie within an annular groove G, formed in the sleeve H, which sleeve is adapted to revolve with the shaft, but can also slide longitudinally thereof.

I is a groove-collar loosely surrounding the shaft A and adapted to slide longitudinally thereof. The end of a bell-crank-controlling lever J lies within the groove of this collar, and this lever is held in any position set by the rack-and-pawl mechanism K. Of course it is understood that this lever is pivoted to a stationary portion of the framework.

L is a spring interposed between the collar I and the sleeve H, so that when the collar I is forced toward the sleeve H the tension of the spring L will tend to force the sleeve H toward the collar C.

M is a lever pivoted to some stationary portion of the framework at M', and one end of this lever is connected to the collar I, so as to move with said collar in its sliding movements. The other end of the lever is in the form of a segment N, concentric with the pivotal point M. The periphery of this segment has cog-teeth formed thereon which mesh with a small pinion O, journaled in some stationary portion of the framework, and this pinion is secured upon the same shaft as the indicating-hand P. The pointer N of this indicating-hand passes over a dial Q, which dial contains two different sets of numbers, one adapted to indicate the revolutions of the motor and the other the speed at which the vehicle is traveling per hour.

R is a lever pivoted to some stationary portion of the framework, and one end of this lever lies within the annular groove H', formed in the sleeve H, and the other end upon the opposite side of the pivotal point is connected by a rod or link S to the controlling mechanism of the motor, either a valve or rheostat, according to the motive power of the vehicle.

In operation by pressing downward upon the controlling-lever J the collar I will be forced toward the sleeve H, and thus the spring L will be compressed, and the spring L pressing against the sleeve H will slide said sleeve toward the collar C and in doing so will rock the lever R, so as to increase the power, and as the power is increased the speed of the shaft A will be correspondingly increased, and the balls or weights F will be thrown out by centrifugal force, and as the weights or balls F are thrown outward the sleeve H will

be forced away from the collar C against the tension of the spring, and thus by rocking the lever R in the opposite direction reduce the power, and it will thus be seen that it depends upon what tension the spring L has as to the distance the governor-balls can force the slide H away from the collar C, and it can be seen that if the collar I is forced toward the sleeve H, compressing the spring until the coils of the same nearly meet, the pressure will be so great against the sleeve that the centrifugal force of the governor will exert very little influence toward further compressing the spring, and therefore the valve or other controlling mechanism will remain wide open, or nearly so, and the highest possible speed will be obtained.

By connecting the lever M with the collar I the hand or pointer P is moved with the collar and indicates upon the dial the speed at which the vehicle is traveling per hour and the number of revolutions of the motor. This is a great advantage to the driver, as he can tell at a glance whether his vehicle is traveling within the prescribed limit or not.

The great advantage of my apparatus is that the speed of the vehicle can be increased or reduced at any time without stopping the motor, and the revolutions of the motor can be reduced, say, to one hundred revolutions per minute and can then run for hours with little expense, and by having the motor detachable from the driving-shaft gear the vehicle can be stopped and the motor can still continue running at a low speed, and thus overcome the great disadvantage in motor-vehicles, especially in gasolene-carriages, in starting the motor, which has had to be done by hand or foot power.

Another great advantage of my apparatus is that by relaxing the spring L almost entirely the vehicle can be stopped.

Of course I do not wish to be limited to the exact construction here shown, as slight modifications could be made without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is—

1. In a device of the character described, the combination of a driving-shaft with arms secured thereon, governor balls and levers pivoted to said arms, a sleeve mounted upon the driving-shaft and adapted to slide longitudinally thereof, the governor-levers being in connection with said sleeve, a lever for controlling the source of power also in connection with said sleeve, a collar mounted upon the driving-shaft and adapted to slide longitudinally thereof, a spring interposed between said collar and the sleeve, a controlling-lever for the purpose of sliding said collar longitudinally of the shaft, and indicating means dependent upon the movement of said collar for its motion, as and for the purpose specified.

2. The combination of a driving-shaft with a collar secured rigidly thereon, right-angle arms extending outward from said collar upon opposite sides, bell-crank levers pivoted to the outer end of said arms, weights or balls secured upon one member of the levers, a sleeve mounted upon the driving-shaft and adapted to slide longitudinally thereof, the other members of the bell-crank levers being in engagement with said sleeve, a lever for controlling the source of power also connected to said sleeve, a collar mounted upon the driving-shaft and adapted to slide longitudinally thereof, a spring interposed between said collar and the sleeve, a controlling-lever in engagement with said collar for the purpose of sliding the same longitudinally, a dial, a pointer-hand, and means extending from said pointer-hand to the controlling-collar whereby the pointer-hand is moved by the movement of the collar, as and for the purpose specified.

3. In a device of the character described, a driving-shaft, a centrifugal governor carried by said driving-shaft, a sliding member connected to the source of power and also to the governor and adapted to be moved by said governor as the speed of the driving-shaft is increased or diminished, a spring adapted to exert pressure against the slidable member against any action of the governor, means for compressing or reducing the tension upon the spring, and means depending upon the movement of the controlling mechanism for indicating the speed of the motor upon a dial, as and for the purpose specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

GEORGE W. CASTEEL.

Witnesses:
S. W. STRAUS,
C. HEILBRON.