

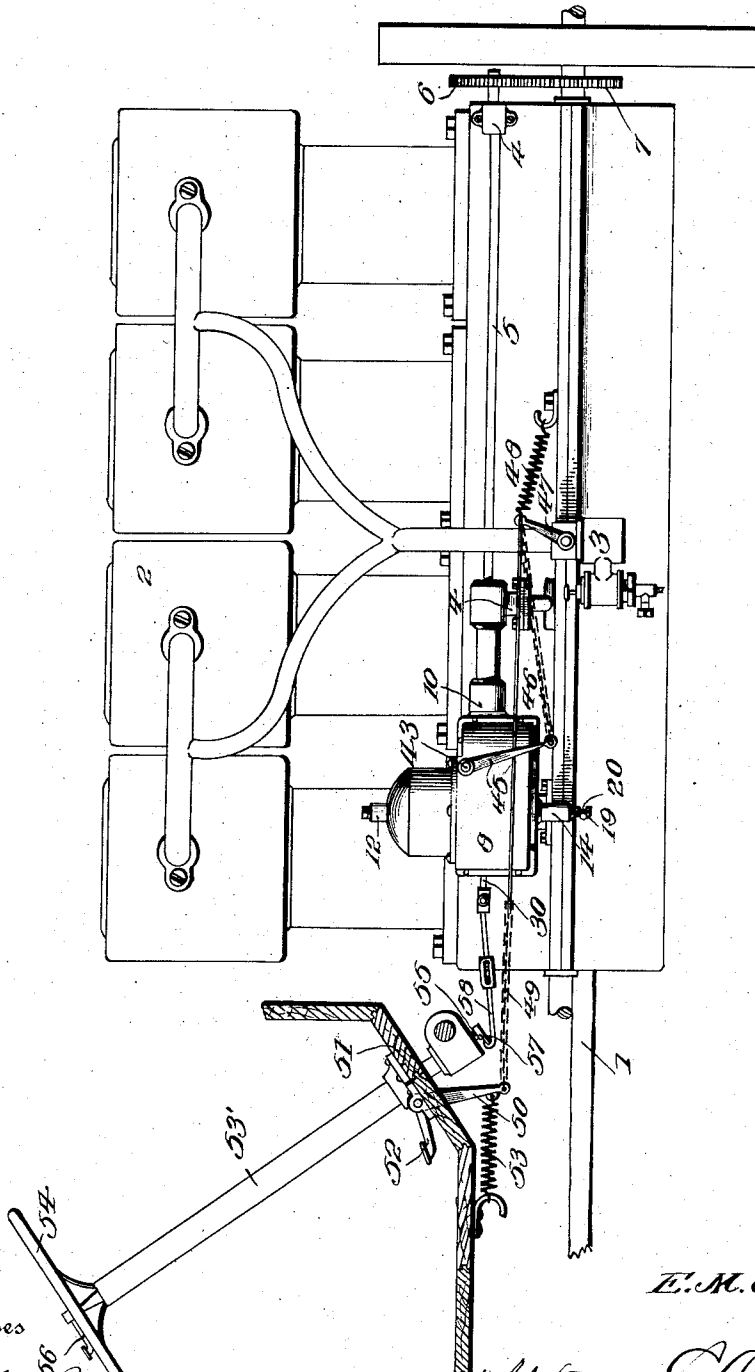
E. M. CARR.
SPEED GOVERNOR.
APPLICATION FILED NOV. 27, 1911.

1,049,669.

Patented Jan. 7, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
H. L. McQuay
G. B. Norton.

Inventor
E. M. Carr.

By *Watson E. Coleman*
Attorney

E. M. CARR.
SPEED GOVERNOR.
APPLICATION FILED NOV. 27, 1911.

1,049,669.

Patented Jan. 7, 1913.

2 SHEETS—SHEET 2.

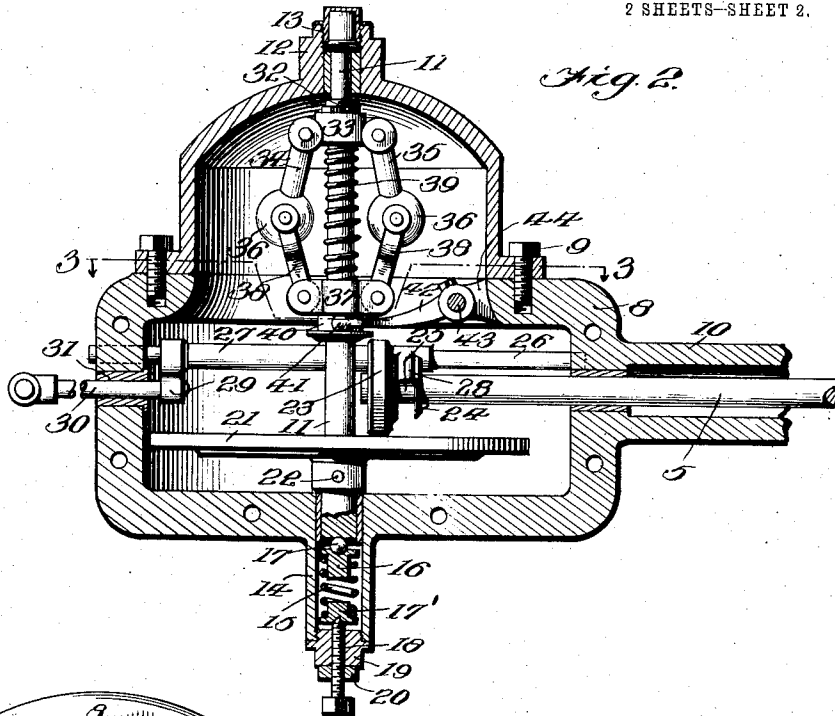


Fig. 2.

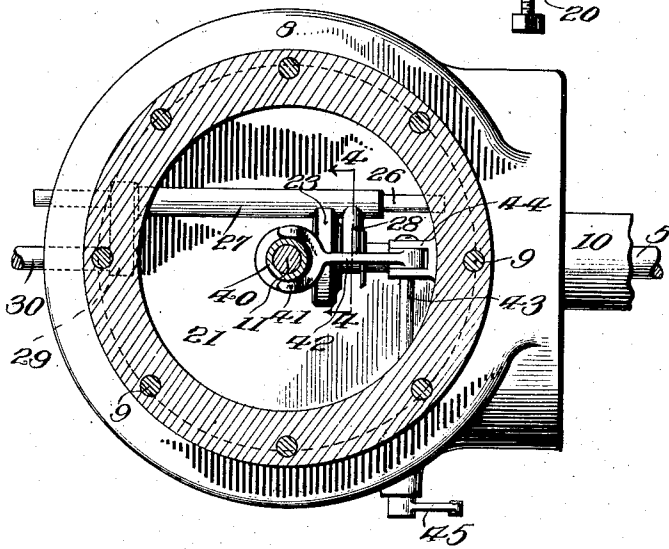


Fig. 3.

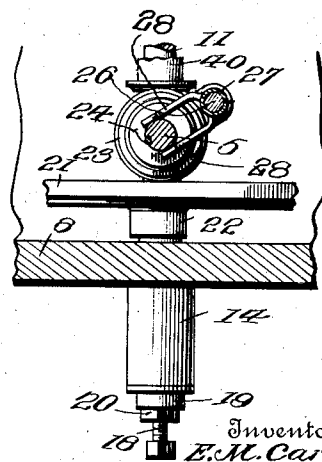


Fig. 4.

Witnesses

H. L. M. Day.
G. B. Norton.

By

Watson Coleman
Attorney

Inventor
E. M. Carr.

UNITED STATES PATENT OFFICE.

EMORY M. CARR, OF NEWCASTLE, INDIANA.

SPEED-GOVERNOR.

1,049,669.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed November 27, 1911. Serial No. 662,643.

To all whom it may concern:

Be it known that I, EMORY M. CARR, a citizen of the United States, residing at Newcastle, in the county of Henry and State of Indiana, have invented certain new and useful Improvements in Speed-Governors, of which the following is a specification, reference being had to the accompanying drawings.

10 My invention relates to new and useful improvements in speed governors for motor vehicles, and my object is to provide an apparatus, by means of which any desired speed of the motor vehicle will be automatically maintained, regardless of the variation of grades and the condition of the roads.

20 A further object of the invention resides in providing a device of this character which is designed to cooperate with the carbureter of the motor, and a further object resides in providing a device which will prevent racing of the motor when the clutch is disengaged.

25 Still another object resides in providing a device which will economize in the use of gasoline, the same requiring just sufficient gasoline to actually acquire the speed desired, and a further object is to decrease the work of the driver and eliminate danger of accidents caused ordinarily by the difficulties experienced in throttling the motor.

30 A still further object resides in providing a device which is extremely simple in construction, inexpensive to manufacture, and one which will be very efficient and useful in operation.

35 With these and other objects in view, my invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter referred to and more particularly pointed out in the specification and claim.

40 In the accompanying drawings forming a part of this application, Figure 1 is a fragmentary section through the forward portion of a motor vehicle showing my improved device applied to use in connection with the motor thereon. Fig. 2 is an enlarged vertical section through the casing of the governor. Fig. 3 is a horizontal section through the casing of the governor as seen on line 3—3, Fig. 2, and, Fig. 4 is a vertical section as seen on line 4—4, Fig. 3.

45 In carrying out my invention, I shall refer to the drawings in which similar reference

characters designate corresponding parts throughout the several views and in which—

1 indicates a section of the frame or chassis of a motor vehicle having mounted thereon, the gasoline motor 2 of any preferred type, whatsoever, said motor being provided with the usual carbureter 3, and rotatably mounted in the bearings 4 carried on one side of the crank case of the motor, is a shaft 5, said shaft being adapted for rotation directly from the operation of the motor through the medium of the gears 6 and 7 carried, respectively, on said shaft 5 and the crank-shaft of the motor. This shaft 5 is disposed on the same side of the crank case on which the carbureter is disposed and a casing or housing 8 formed in sections and held together by means of the bolts 9, is secured to the same side of said crank case, one section of said housing being provided with a tubular portion 10 which forms a substantial bearing for said shaft 5 which also extends therethrough and into the housing or casing 8. A shaft 11 extending vertically within said housing or casing 8 has the upper end thereof rotatably mounted in a tubular portion 12 formed on the dome or top of the upper section of the housing 8, said shaft being properly held in this tubular portion by means of a cap or the like 13, while the lower end thereof is disposed in a similar tubular extension 14 formed on the bottom of the lower section of the housing in alignment with the tubular portion 12. A coil spring 15 mounted in the lower tubular portion 14, has a spring support or flanged stud 16 engaged with the upper coil thereof, the outer face of this member 16 receiving a ball bearing 17 which is also received by the lower end of the shaft 11, and the lower end of the spring 15 has engaged therewith, the stud or the like 17 similar to the member 16 which receives in engagement therewith, the end of a set screw 18 extending through a nut 19, the latter nut forming a closure for the lower end of the tubular portion 14. This set screw 18 will, of course, adjust the tension of the spring 15 which yieldingly supports the lower end of the shaft 11, and said set screw may be retained in any adjusted position by means of the jam nut 20. As stated, the vertical shaft 11 is rotatably mounted in the bearings formed by the tubular portions 12 and 14, respectively, so that a friction disk 21 secured on the shaft

11 by means of the adjusting screw 22 may cause said shaft to rotate on its own rotation, and in order to drive said disk 21 and correspondingly the shaft 11, I provide a friction drive wheel 23 on the portion of the shaft 5 which extends within said housing or casing. This drive wheel 23 is keyed to the shaft 5 by means of a key 24 so as to rotate with said shaft, the same being capable, however, of longitudinal movement on said shaft, and as the same is adapted to have normal engagement with the upper face of the disk 21, it will be appreciated that said disk will be rotated at various speeds, according to the disposition of the drive wheel nearer to or farther from the axial center of the same.

In order to provide means for the longitudinal movement of the friction drive wheel 23 on the shaft 5, the hub of said wheel is provided with a groove 25, and a guide rod 26 extending horizontally through the casing or housing 8, has slidably disposed thereon, a shifting bar or sleeve 27, said sleeve being provided with a pair of arcuate fingers or arms 28 which are received in the groove 25. The one end of the sleeve 27 is provided with a laterally extending arm or the like 29 which receives in engagement therewith, the one end of a rod 30, said rod slidably extending through a bearing 31 formed in the one side of the housing or casing 8, whereby it will be seen that as this arm is moved back and forth, the sleeve 27 will be shifted to correspondingly dispose the drive wheel 23 in various positions with respect to the disk 21, and I have provided a particular means for the manual operation of this rod 30, which will be hereinafter and more particularly described.

Threaded on the vertical shaft 11 adjacent its upper end, and locked in such position by means of a lock nut 32, is a collar 33, the same having pivotally connected thereto at diametrically opposite points thereon, the ends of a pair of arms 34 and 35, said arms having the opposite ends thereof provided with weights 36, and an additional collar 37 which is slidably disposed on said shaft 11 below the collar 33, has connection with the weighted portions 36 of said arms by means of the link members 38. Encircling the shaft 11 between the two collars 33 and 37, is a strong coil spring 39, the tendency of which is to force the movable collar 37 downwardly and away from the collar 33, but it will be appreciated that when the shaft 11 is rotated, the weighted ends 36 of the arms 34 and 35 will tend to extend outwardly, through centrifugal force, to correspondingly draw the collar 37 upwardly on said shaft and overcome the tension of the spring 39. The collar or the like 37 is provided with a groove 40 which receives therein, the arcu-

ate bifurcations 41 of a bifurcated arm or fork 42, this arm 42 being carried on a rock shaft 43 which is oscillatingly mounted in a bearing 44 carried on the inner wall of the housing 8. As the collar 37 is moved vertically on the shaft 11, through centrifugal force, during the rotation of said shaft, it will be appreciated that the arm 42 will be moved therewith to correspondingly oscillate the shaft 43 in its bearing and said rock shaft which has one end thereof extended through the side of the lower section of the casing or housing 8, carries thereon, a lever or the like 45. This lever has the outer end thereof connected, by means of a flexible connection 46, to an additional lever 47 which is mounted on the carbureter 3 and controls the mixture of gas and air which enters the cylinders of the motor, and said lever 47 has also connected therewith, the one end of a coil spring 48. The opposite end of the coil spring is secured to the crank case, and it must be here stated that when drawn under the tension of the spring 48, said lever adjusts the carbureter to permit the maximum amount of mixture to be drawn into the cylinders of the motor. Also connected with said lever 47 is the one end of an additional flexible connection 49, which latter connection has its opposite end connected with the free end of a lever 50 which extends through the foot-board 51 and is carried on the foot pedal or accelerator 52. A coil spring 53 has one end engaged with said lever 50 and the other end engaged with the under face of the foot-board 51 and the tension of this spring is greater than the tension of the spring 48, so that the normal tendency thereof will be to overcome the tension of this latter spring 48 and thereby draw the lever 47 to such a position as to prevent the mixture passing from the carbureter to the cylinders, whereby it will be seen that pressure must be placed upon the pedal 52 to permit the motor to operate. The usual steering post 53' having the steering wheel 54 thereon, has extending therethrough a rod or the like 55, the upper end of which has provided thereon, a hand-operating lever 56 in connection with the steering wheel 54, while the lower end thereof is provided with a laterally extending arm or crank 57 which has pivotal connection with an adjustable rod 58. This latter rod 58 is, in turn, pivoted to the end of the rod 30 heretofore described, whereby it will be seen that the operator of the vehicle may readily control the disposition of the drive wheel 23 through the medium of this hand lever or the like 56.

In operation, after the vehicle has been set in motion in the customary manner, should it be desired to maintain a uniform speed throughout the course pursued by the

machine, the lever 56 is adjusted to such a position as will dispose the friction drive wheel 23 in such a position with respect to the disk 21 as to result in the desired speed. 5 As the shaft 11 rotates, the weights 36, due to centrifugal force, will fly outward and upward, compressing the spring 39 and, in turn, rocking the shaft 43, which rocking of the shaft will act upon the lever 47, through 10 the medium of the connection 46, thereby closing or partly closing the valve in the carbureter to decrease the speed of the motor. The throttling of the valve in the 15 carbureter to permit but a certain amount of the mixture to pass to the cylinders of the motor, will maintain a speed to correspond with the speed to which the lever 56 is adjusted and the speed which is desired by the operator, but it will be appreciated 20 that should for any reason, whatsoever, the speed of the motor be decreased during the operation of the machine, the speed with which the shaft 11 is being rotated, will be decreased and the spring 39 will overcome 25 the centrifugal force which will, through the medium of the lever 45 and its connections to the lever 47, permit the throttle valve to be opened to a greater extent and thereby permit a greater amount of mixture 30 to enter the cylinders. The motor will then be operated at a greater speed, but in view of the disposition of the friction drive wheel 23 with respect to the disk 21, a greater speed than is desired cannot be obtained. 35 When it is desired to increase the speed at which the vehicle is traveling, the lever 56 is moved so as to dispose the drive wheel 23 farther from the axial center of the disk 21, which will cause the shaft 11 to rotate

at a lesser speed, thereby allowing the lever 40 47 to open the throttle valve to a greater extent and permit a greater mixture to enter the cylinders of the motor. From this construction and operation, it is obvious that any desired speed of the vehicle having this 45 speed governor operatively mounted thereon, may be automatically maintained, regardless of the variation of grades or the condition of the roads.

From the foregoing, it will be seen that I 50 have provided simple, inexpensive and efficient means for accomplishing the numerous objects of the invention, and it is obvious that while the elements described are well adapted to perform the functions set forth, 55 various changes in form, proportion and in the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the principles 60 of the invention.

What I claim is:—

In a speed governor for motor vehicles, a casing comprising an upper and lower section removably secured to one another, a 65 vertical shaft rotatably mounted in the upper and lower walls of said casing, said shaft being yieldingly supported in position from the bottom thereof, means to adjust said shaft vertically of the casing, means to rotate said shaft, and a governor in connection 70 with said shaft.

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

EMORY M. CARR.

Witnesses:

CLARENCE M. BROWN,
GERTRUDE MACY.