

P. D. KARSHNER.
SPEED REGULATOR.
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1,058,594.

Patented Apr. 8, 1913.

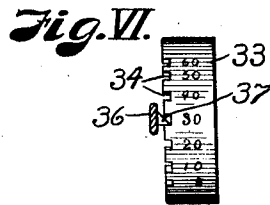
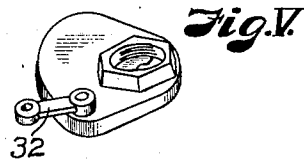
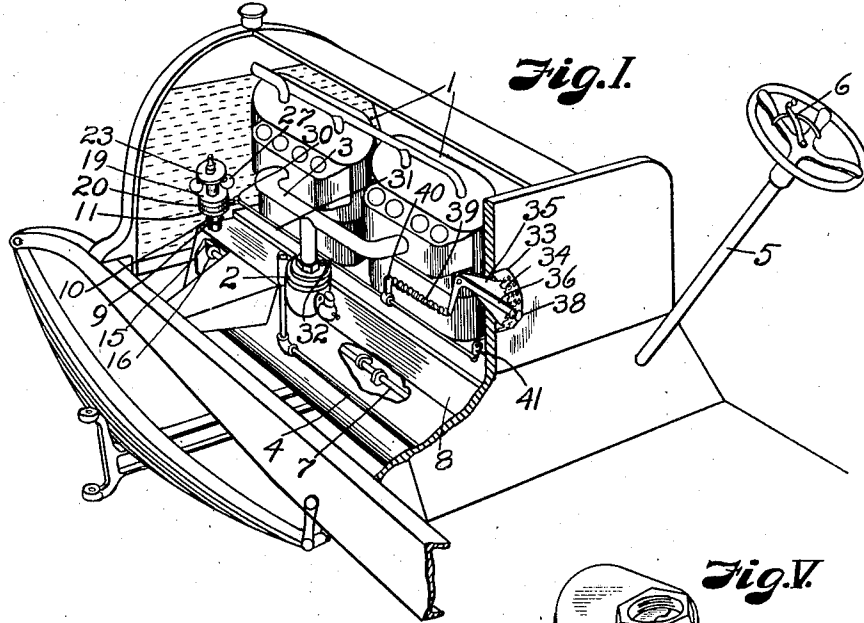


Fig. II.

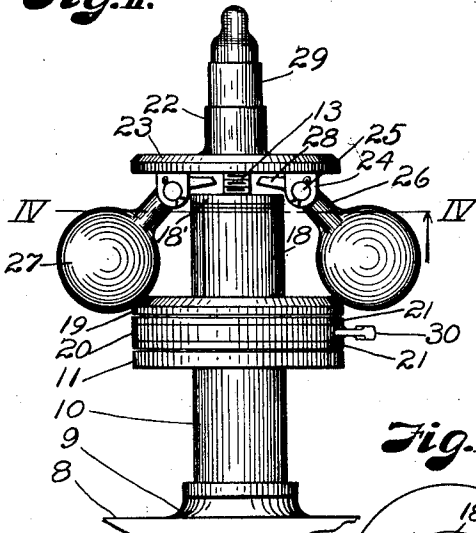


Fig. III.

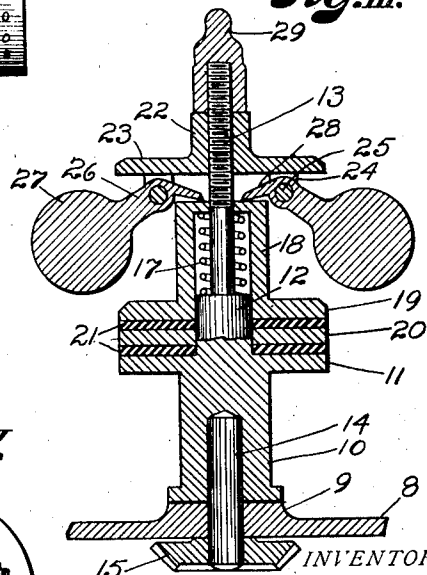
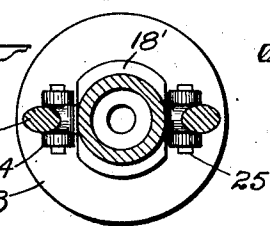


Fig. IV.



WITNESSES:

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SPEED-REGULATOR.

1,058,594.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PEARL D. KARSHNER, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Speed-Regulators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to a regulator for vapor engines and more particularly to a device for automatically regulating the discharge of a fluid fuel medium from a carbureter to the cylinders of such an engine, for the purpose of limiting the fuel supply in order to prevent the vehicle, which is driven by such engine, from traveling at greater than a predetermined speed.

It is a further object of my invention to provide means for controlling the supply of fuel in order that the speed at which the vehicle may be driven may be determined by the operator. In accomplishing this object I have provided the improved details of structure hereinafter described and illustrated in the accompanying drawings, in which:—

Figure I is a perspective view of the hood and dash of an automobile having an engine provided with a regulator constructed according to my invention, a part of the hood being removed to illustrate the arrangement of the regulator and its connection with the carbureter. Fig. II is an enlarged elevational view of the governor mechanism. Fig. III is a longitudinal section of same. Fig. IV is a cross section on the line IV—IV, Fig. II. Fig. V is a detail view of a part of the carbureter and its supply valve. Fig. VI is a detail view of a portion of the quadrant and regulating lever.

Referring more in detail to the parts:—1 designates engine cylinders, 2 a carbureter, 3 vapor conduits leading from the carbureter to the cylinders, 4 a supply tube leading to the carbureter, 5 a steering post having a lever 6 for controlling the vapor supply and 7 an engine cam shaft, all of which parts may be of ordinary construction.

On the engine base 8 is a tubular boss 9, and seated on said boss is a post 10 having a flange 11 at its upper end, and a central stud 12 having an inset pin 13, the upper portion of which is screw threaded. Fixed to the base of post 10 is a pin 14 which extends downwardly through the boss 9 and carries a beveled gear 15 which meshes with a gear 16 on the cam shaft 7. Seated on the shoulder of stud 12 and surrounding the pin 13 is a spring 17, and fitting over the pin and stud is a cup 18, the lower end of which fits snugly against, but is adapted for revoluble and sliding movement on the stud 12, and has a flange 19 of substantially the same diameter as the post flange 11. The top of the cup is apertured so that pin 13 may project therethrough and is supported on the spring 17, so that the flange 19 is yieldingly spaced from the flange 11. Interposed between the flanges 11 and 19 is a ring 20 having upper and lower faces 21 of fiber, or other friction inducing material, the spring 17 being adapted for holding the cup flange spaced above the upper ring face and out of contact therewith. Threaded onto the upper end of pin 13 is a cap 22 having a flange 23 at its lower end, provided with depending paired lips 24 which extend downwardly at the sides of the cap body 18 and are adapted for engaging a flange 18' thereon, to prevent the cap flange from turning around the cup. See Fig. IV. Ears 24 carry pins 25 and pivotally mounted on said pins are the governor arms 26 having weights 27 at their outer ends and having lips 28 at their inner ends; said lips being located above the top of the cup and adapted for impingement thereagainst when the governor weights are lifted by centrifugal force. On the upper end of pin 13 is a lock-nut 29 for holding the cap 22 in place. Ring 20 is provided with a lug 30 which is pivotally connected with a rod 31 which extends back toward the dash and is operatively connected with a valve not shown on the carbureter 2, through a link 32.

33 designates a quadrant which is preferably mounted on the dash of the vehicle and has notches 34 which are graduated and indicate various road speeds. Pivotaly mounted adjacent to the quadrant, preferably on a web 35 thereof, is a bell crank lever 36, one arm of which has a tooth 37

for taking into the quadrant notches and is provided with a knob 38. Connected with the other arm of lever 36 is one end of a spring 39, the opposite end of which is connected with the carbureter rod 31, preferably through a mounting 40. The carbureter rod is also connected with the lever 6 on the steering mechanism by a suitable device (not shown), but indicated by the crank 41. Prior to installation of the regulator, the parts thereof may be adjusted, relative to the motor, so that the spring tension will resist the governor up to a certain speed of the engine, and the quadrant arranged to correspond with the spring and governor action.

Presuming the parts to be assembled as described, the cam shaft operates the governor 14 continuously during the operation of the engine to revolve the post 10, cap 22 and the governor arms; the cup 18 being revolved by the engagement of the ears 24 with the flange 18', and the ring 20 having but slight active tendency, which is resisted by the spring 39. As the speed of the motor increases the governor members are revolved more rapidly until, at a predetermined speed, the weights have been lifted by centrifugal force sufficiently to cause the arms 28 to press downwardly on the top of the cup, such downward pressure causing the cup flange to engage the loose ring and press same between the cup and post flange. Under such engagement the friction inducing faces of the ring form a clutch between the loose cup and the revoluble members, causing the clutch to move with the governor and drawing the rod 31 forwardly against the tension of spring 39. When the rod is drawn forwardly the valve in the carbureter is actuated to shut off the supply of vapor to the cylinders and reduce the power of the motor. As soon as the speed has slackened, due to such decrease of power, the spring 39 draws the rod 31 back to open the carbureter valve, and vapor is again supplied to the cylinders to the former extent. By manipulation of the quadrant lever, the tension of the spring may be increased or decreased to lighten or increase the work of the governor, so that the speed at which the supply of fuel is influenced may be varied.

It is apparent that the mechanism described can be used in connection with the ordinary controlled lever on the steering wheel.

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

1. A regulator comprising a revoluble post, inner and outer members idly mounted on the post, governor arms carried by the post and adapted for engaging the outer idle member to move the inner idle member into operative engagement with the post, a regu-

lating device connected with the inner idle member, and means for holding the regulating device at a predetermined tension.

2. In a regulator, a revoluble post, a member adapted for free revoluble movement on said post, an idler movably mounted on said post, governor mechanism carried by the post and adapted for moving the revoluble member against the idler, a regulating device connected with the idler, and means for holding the regulating device at a predetermined tension and returning same to initial position.

3. A regulator comprising a revoluble post, a ring member idly mounted on said post, a cup on said post, governor arms carried by said post and having lips adapted for actuating said cup, to cause same to press the ring member into operative engagement with the post, a regulating rod connected with said ring member, and means for holding the regulating rod at a predetermined tension.

4. A regulator comprising a revoluble post, inner and outer clutch members idly mounted on said post, governor arms carried on said post and having lips adapted for engagement with the outer member, for pressing same into contact with the inner member, a regulating rod connected with the inner member, means for holding the rod at a predetermined tension, and means for returning the rod to its initial position.

5. A regulator comprising a revoluble post, a ring member idly mounted on said post, a cup revolubly mounted on said post, governor arms carried by the post and adapted for actuating the cup member, to cause same to press the idle ring member into operative engagement with the post, and a regulating device connected with the ring member.

6. A regulator comprising a revoluble post, having a stud and pin rising from the central portion thereof, inner and outer members revolubly mounted on said stud, a cap carried on the pin, governor arms pivotally suspended from said cap and adapted for actuating the outer revoluble member into operative engagement with the post to cause same to press the inner member.

7. A regulator comprising a revoluble post, having a flange, a stud rising from the central portion of the flange, a pin rising from the central portion of said stud, an idle member revolubly mounted on the post flange, a cup member revolubly mounted on the stud and having a flange facing the idle member, a cap carried on the pin, governor arms mounted on said cap, and adapted for moving the cup against the idle member, and a regulator connected with the idle member.

8. A regulator comprising a revoluble post, a ring member idly mounted on said post, a cup member revolubly mounted on

said post, governor arms carried by the post and adapted for actuating the cup member to cause same to press the idle member, a regulator rod connected with the idle member, and a spring for tensioning said rod.

5 9. In a regulator, a revoluble post having a flange, a stud rising from the central portion of the flange, a pin rising from the central portion of said stud, a clutch member
10 revolubly mounted on the stud, a cup surrounding portions of the pin and stud and having a flange facing the clutch member, a spring seated on the stud and yieldingly

tensioning the cup from the clutch member, a cap carried on the pin, governor arms pivotally suspended from said cap and adapted for actuating the cup, a rod connected with the clutch member, and a spring connected with said rod. 15

In testimony whereof I affix my signature 20
in presence of two witnesses.

PEARL D. KARSHNER.

Witnesses:

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