E. F. STOFFEL.

GOVERNOR.

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1,096,962. **Patented May 19, 1914.**

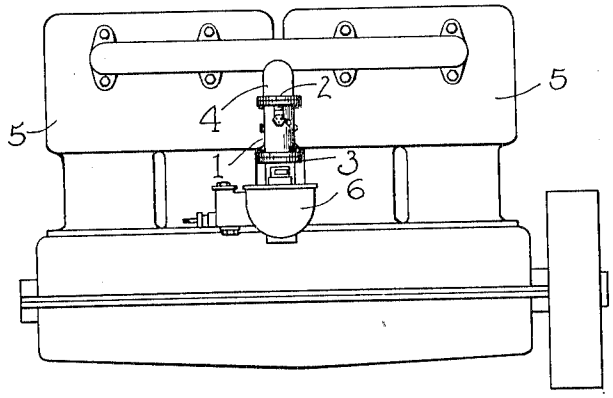


Fig. 1.

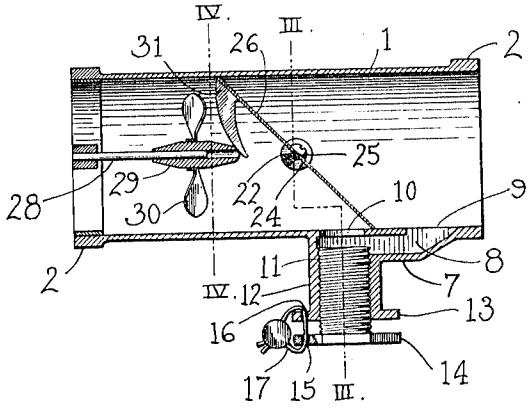


Fig. 2.

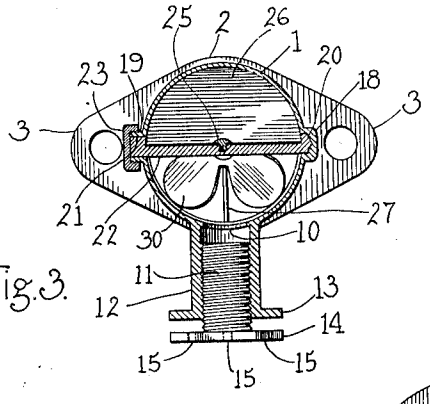


Fig. 3.

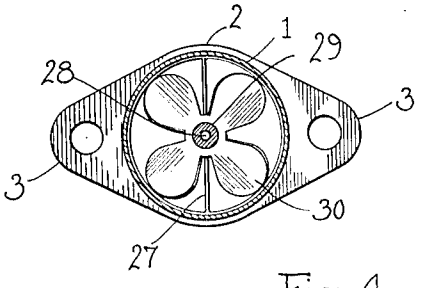


Fig. 4.

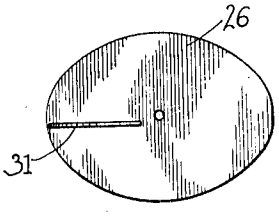


Fig. 5.

Witnesses

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GOVERNOR.

1,096,962. Specification of Letters Patent. Patented May 19, 1914.

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To all whom it may concern:

Be it known that I, EMIL F. STOFFEL, a citizen of the United States of America, residing at Pontiac, in the county of Oakland and State of Michigan, have invented certain new and useful Improvements in Governors, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an automatic governor, especially designed for motor trucks and large vehicles operated by internal combustion engines.

To limit the speed of a motor truck, reduce the consumption of fuel to a minimum, and to insure a positive and reliable cooperation of the working units of a motor truck is the principal object of my invention and this is accomplished by providing a novel automatic governor that is installed in connection with the manifold intake pipe of an engine, whereby the supply of explosive mixture to the engine can be regulated to a nicety and automatically controlled.

My invention further aims to provide a simple and durable automatic governor wherein a valvular member regulates the supply of explosive mixture and a fan actuated butterfly valve is employed for deflecting the explosive mixture whereby the supply of the same can be regulated by the valvular member.

The invention will be hereinafter specifically described and then claimed, and reference will now be had to the drawing, wherein—

Figure 1 is a side elevation of the automatic governor as applied to the manifold intake pipe of an explosive engine; Fig. 2 is a longitudinal sectional view of the governor; Fig. 3 is a cross sectional view of the same taken on the line III—III of Fig. 2; Fig. 4 is a similar view taken on the line IV—IV of Fig. 2; Fig. 5 is a detail view of a detached butterfly valve.

A governor in accordance with this invention comprises a tubular or hollow cylindrical casing 1 having the ends thereof flanged, as at 2 and provided with diametrically opposed apertured ears 3 which permit of the ends of the casing being secured in alinement with the ends of a manifold intake pipe 4 connecting the cylinders of an engine 5 with a carbureter 6.

The casing 1 has the outer side thereof, adjacent to one end, provided with a longitudinal enlargement 7 having a by-path 8 formed therein with the ends of the by-path in communication with openings 9 and 10 in the wall of the casing 1. The communication between the by-path 8 and the opening 10 is controlled by a screw valve 11 adjustably mounted in a connection 12 formed integral with the enlargement 7 and the casing 1, said connection extending at right angles to said casing and having the outer end thereof flanged, as at 13. The screw valve 11 has a head 14 provided with apertures 15. The flange 13 of the connection 12 has an aperture 16 and the apertures 15 and 16 accommodate a seal 17 or other type of lock for securing the screw valve 11 in adjusted position. The seal or locking device 17 prevents the valve from being tampered with after having been set to regulate the passage of an explosive mixture through the by-path 8 and it is through the medium of the valve 11 that the speed limit of a motor truck is set and maintained, as will hereinafter more fully appear.

The casing 1, intermediate the ends thereof, has diametrically opposed bosses 18 and 19, the boss 18 having the outer end thereof closed and the inner end provided with a bearing 20. The boss 19 has a longitudinal opening 21 coöperating with the bearing 20 in supporting the ends of a rock-shaft 22, said shaft being placed transversely of the casing 1 by inserting the same through the opening 21. The outer end of the opening 21 is closed by a detachable cap 23 screwed or otherwise mounted upon the outer end of the boss 19. The rock-shaft 22 has a flattened portion 24 and secured to the flattened portion by a screw 25 or other fastening means is a butterfly valve 26. The valve 26 is oval in plan and when diagonally disposed within the casing 1 the edges of said valve engage the walls of said casing and provide a partition adapted to deflect an explosive mixture into the opening 10 and the by-path 8.

An end of the casing 1 has a spider or cross-bar 27 supporting an inwardly projecting longitudinal stud shaft 28, and revolubly mounted upon the said shaft is the hub 29 of a bladed wheel or fan 30. The hub 29 can slide longitudinally of the shaft 28 and the inner end of said hub is adapted to contact with a vane or lug 31, carried by the butterfly valve 26.

In operation, the normal position of the bladed wheel or fan 30 is in proximity to the spider 27 and with a normal pressure or sup-

ply of explosive mixture passing through the casing 1 from the spider end thereof, the wheel or fan 30 simply revolves without shifting longitudinally of the shaft 28. This is accomplished by the governor being used in a vertical position, as shown in Fig. 1 and the fan 30 remains at the bottom of the shaft 28 by gravity, but an excessive supply of explosive mixture causes the fan to revolve and gradually rise upon the shaft to impinge the vane or lug 31 of the butterfly-valve 26. The vane or lug 31 holds the butter-fly valve 26 open whereby the explosive mixture can pass through the casing. Now, should there be an excessive supply of explosive mixture the wheel or fan 30 is shifted longitudinally of the shaft 28 toward the butterfly-valve 26. The hub of the wheel or fan 30 contacts with the vane or lug 31 of the butterfly valve 26 and closes said valve, thereby shutting off the communication between the ends of the casing 1, except through the medium of the by-path 8. It is therefore necessary for the explosive mixture to pass through the by-path and its passage is regulated by the valve 11, which can be set to hold in check an excessive supply of explosive mixture, until the supply has become normal. For instance, when the driver of a motor truck knows that the engine operates at a thousand revolutions per minute, he can hold the butterfly-valve 26 closed and then regulate the valve 11 whereby sufficient mixture will pass through the by-path 8 to operate the engine at a thousand revolutions per minute. Then with the butterfly valve released the supply of explosive mixture can pass right through the casing 1, but should there be an excessive supply, the butterfly valve 26 is closed and the supply held in check on account of its passage through the by-path 8 being restricted by the valve 11.

From the fore-going it will be observed that my automatic governor is characterized by a fan actuated butterfly valve which deflects the mixture into a path where its passage can be regulated and consequently the speed of a motor truck or similar vehicle.

While in the drawing there is illustrated a preferred embodiment of my invention, it is to be understood that the structural elements are susceptible to such changes, as in the size, proportion and manner of assemblage, as fall within the scope of the appended claims.

What I claim is:—

1. In an automatic governor, a casing having a by-path, a valve for controlling the passage through said by-path, and a fan actuated butterfly valve arranged in said casing and adapted to form a partition therein.

2. In an automatic governor adapted to be actuated by an explosive mixture, a casing provided with a by-path, a valve controlling the passage through said by-path, a butterfly valve arranged in said casing and adapted to deflect an explosive mixture into said by-path, and means reciprocatable of said casing and adapted to contact with said butterfly valve.

3. In an automatic governor for controlling the supply of explosive mixture to internal combustion engines, a casing, an enlargement carried thereby and providing a by-path, means for restricting the passage of said by-path, and fan actuated means within said casing for deflecting explosive mixture into said by-path.

4. In an automatic governor for controlling the supply of explosive mixture to internal combustion engines, a casing, means located in said casing and adapted to form a partition therein to deflect explosive mixture in a direction transverse to the axis of the casing, and revoluble means within said casing for actuating the first mentioned means.

5. In an automatic governor for controlling the supply of explosive mixture to internal combustion engines, a casing, and fan actuated means within said casing and adapted to form a partition therein to deflect explosive mixture in a direction transverse to the axis of the casing.

6. In an automatic governor for controlling the supply of explosive mixture to an internal combustion engine, a casing, an enlargement carried thereby and providing a by-path at one end of said casing, a valve adapted to restrict the passage of said by-path, a butterfly valve arranged in said casing and adapted to deflect an explosive mixture into said by-path, a stud-shaft arranged longitudinally of said casing, and a fan movable longitudinally of said shaft and adapted to actuate said butterfly valve and shift the same to form a partition in said casing.

7. In an automatic governor for controlling the supply of explosive mixture to internal combustion engines, a casing having a wall thereof provided with openings, a butterfly valve arranged in said casing and adapted to deflect an explosive mixture into one of said openings, means for controlling and conveying an explosive mixture from one opening to the other, and means movable longitudinally of said casing for shifting said butterfly valve.

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

EMIL F. STOFFEL.

Witnesses:
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H. J. SOUVIA.