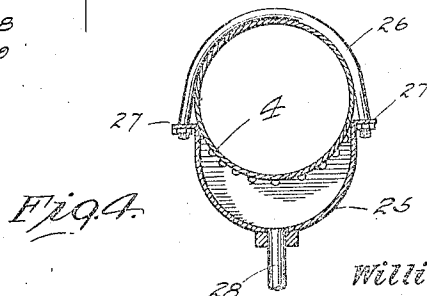
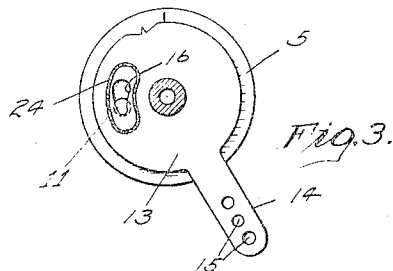
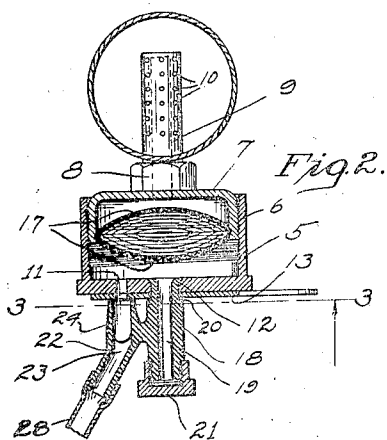
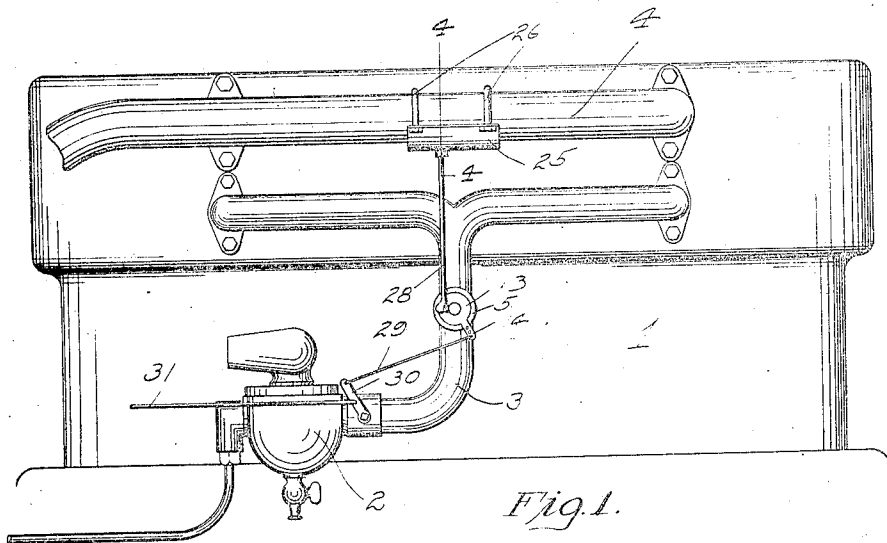


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W. F. GREEN & L. C. GATES.
AIR ADMISSION REGULATOR.
APPLICATION FILED DEC. 10, 1912.

1,070,449.

Patented Aug. 19, 1913.



Inventors
William F. Green and
Laurd C. Gates

Witnesses
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[Signature]

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Attorney

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UNITED STATES PATENT OFFICE.

WILLIAM F. GREEN AND LAUD C. GATES, OF MODESTO, CALIFORNIA,

AIR-ADMISSION REGULATOR.

1,070,449.

Specification of Letters Patent.

Patented Aug. 19, 1913.

Application filed December 10, 1912. Serial No. 733,323.

To all whom it may concern:

Be it known that we, WILLIAM F. GREEN and LAUD C. GATES, citizens of the United States of America, residing at Modesto, in the county of Stanislaus and State of California, have invented certain new and useful improvements in Air-Admission Regulators, of which the following is a specification.

This invention relates to air admission valves, and has special reference to regulators used in connection with carbureters of gas engines whereby the quantity of air mixed with the gas before admission to the engine may be increased or diminished as it is desired.

Another object of this invention is the production of means used in combination with the exhaust of the engine whereby the air is heated before the same is admitted to the engine.

With these and other objects in view this invention consists in general of certain novel combinations, constructions, and arrangement of parts, as will be hereinafter fully described, illustrated in the accompanying drawings, and specifically claimed.

In the accompanying drawings: Figure 1 is a side elevation of a portion of the engine showing the device attached thereto. Fig. 2 is a central longitudinal section of the operating mechanism of the device. Fig. 3 is a section taken on the line 3—3, of Fig. 2, looking in the direction of the arrow. Fig. 4 is a section taken on the line 4—4 of Fig. 1.

Referring to the accompanying drawings, by numerals it will be seen that the device is used in combination with the engine 1 to which the carbureter 2 is attached by means of the manifold 3. It will, of course, be obvious that the engine 1 is also provided with the exhaust manifold 4.

The invention consists of a secondary cup-shaped member 5 which is provided with the threaded portion 6 in which the cup-shaped member 7 is adapted to thread. This cup-shaped member 7 is provided with the nut 8 from which extends the pipe 9 which is provided with the plurality of perforations 10. This pipe 9 fits into the manifold or pipe 3 between the carbureter and the portion connected to the engine 1. The secondary cup-shaped member 5 is provided with the aperture 11 formed in its closed end portion and also with a central opening 12. Mounted upon the closed end portion of the

secondary cup-shaped member 5 there is a pivotally mounted plate 13 which is provided with the operating handle 14, in which a number of openings 15 are formed. This plate 13 is provided with a wedge-shaped opening 16 which is adapted to register with the aperture 11 formed in the secondary cup-shaped member 5, when the plate 13 is oscillated. It will be seen that the wedge-shaped structure of the opening 16 will allow the gradual admission of air until the aperture 11 is fully opened. It will also be seen that mounted within the two cup-shaped portions there is a wire screen which is composed of two concave screen portions 17 whereby the air which passes into the manifold 3 will be free from any foreign substance or dirt. The plate 13 is pivotally mounted upon the secondary cup-shaped member 5 by means of the stud 18 which is provided with a longitudinal extending opening 19. As the upper end of this stud 18 is threaded into the central opening 12, formed in the cup-shaped member 5, and as this stud is provided with a shoulder 20, the plate will be held in a pivotal and firm engagement with the closed end portion of the cup-shaped member 5. In order to close the outer end of this opening 19, there is provided a cap 21 for this purpose. Carried by the stud 18 and integrally formed therewith, there is provided a tubing 22 which is provided with the central opening 23 and the enlarged portion 24. This enlarged portion is adapted to fit over the wedge-shaped opening 16 formed in the plate 13, whereby the entrance opening into the secondary cup-shaped member 5 will always be covered by this tubing 22.

In order to heat the air before admission to the manifold 3, there is provided a U-shaped hood 25 which is held upon the exhaust manifold 4 by means of the inverted U-shaped bolts 26 which are attached to the laterally extending flanges 27 formed upon the hood 25. This hood 25 is positioned in such a manner as to allow the air to pass between the manifold 4 and within the hood 25 and down through the pipe 28 and into the tubing 22. It will, of course, be seen that the handle 14 may be attached by any suitable rod 29 to the lever 30 which controls the usual throttle disk in the carbureter to which is connected the operating rod 31. In operation when the throttle disk is operated by means of the lever 30, the rod will

move the plate 13 so as to allow the wedge-shaped opening 16 to register with the aperture 11. The suction which is created within the manifold 3 will draw the air into the hood 25, carried by the exhaust manifold 4, and will in this manner heat the same, at which time the air will pass down through the pipe 23 and into the tubing 22 by means of the passage 23 and through the opening 16 and aperture 11, at which time it will pass through the screen and will be freed of any foreign substance which may be carried therewith. After the air has passed through the screen 17, it will pass through the pipe 9 and into the manifold 3 by means of the perforations 10 whereby, since the air will be admitted into this manifold 3 in small streams, it will be thoroughly mixed with the gas. When it is desired to cleanse the cylinders, the cap 21 is removed from the stud 18, the opening 16 and the aperture 11 are closed by moving the plate; a hose or other suitable means is attached to the outer portion of the stud 18 and connected to a can or other vessel in which kerosene or other suitable cleansing means is contained. By cranking the engine so as to secure a few strokes of the cylinder the suction will be created within the manifold 3 whereby the kerosene will be drawn through the means

attached to the stud 18 and will also pass through the screen 17 and into the manifold 3 by means of the pipe 9 and into the cylinders, whereby the same will be thoroughly cleansed.

Having thus described the invention what is claimed as new, is:—

An air admission device comprising a plurality of cup-shaped members, a perforated pipe extending from one of said members, the other cup-shaped member provided with a wedge-shaped opening, a plate secured to said last mentioned cup-shaped member and adapted to be oscillated thereon, said plate provided with an opening, means for moving said plate, said opening formed in said plate adapted to register with the opening formed in the cup-shaped member, said opening formed in said cup-shaped member adapted to open gradually as said plate is moved since said opening is wedge-shaped, whereby the amount of air to pass there-through may be easily regulated.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM F. GREEN.
LAUD C. GATES.

Witnesses:

GEO. PERLEY,
M. R. GREEN.