

J. H. COGSWELL.
 ATOMIZER FOR INTERNAL COMBUSTION ENGINES.
 APPLICATION FILED MAY 16, 1918.

1,291,767.

Patented Jan. 21, 1919.

Fig. 1.

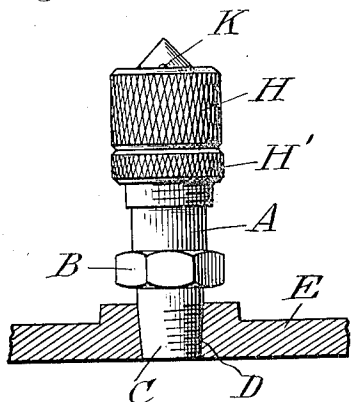


Fig. 3.

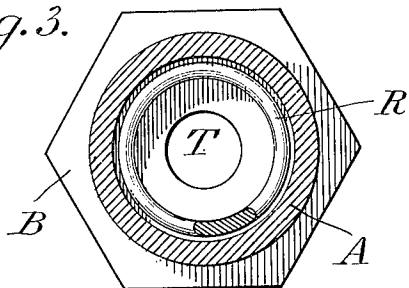


Fig. 4.

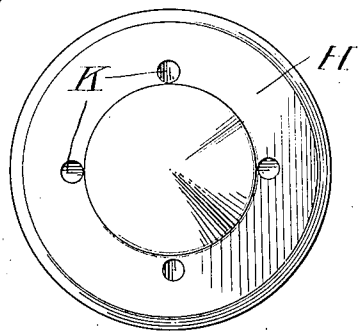


Fig. 2.

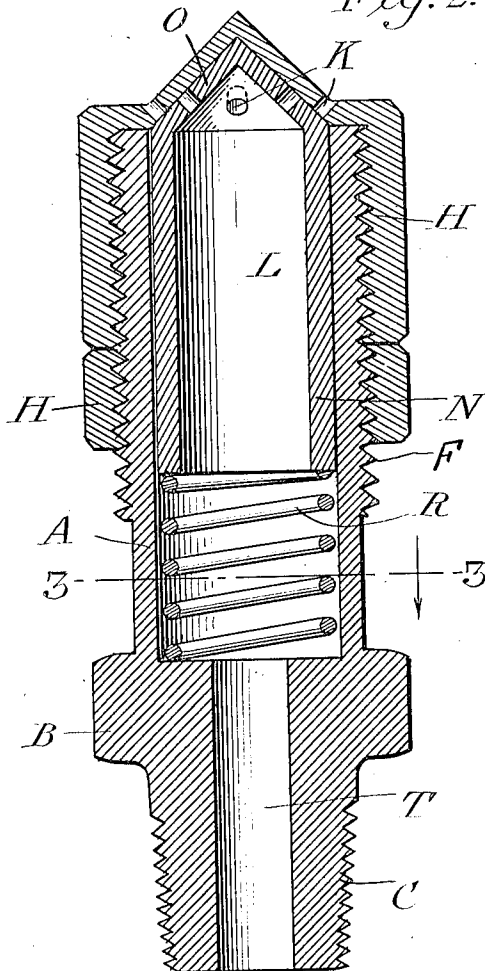
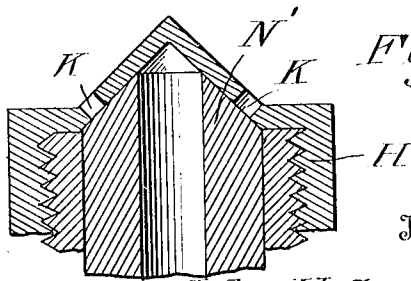


Fig. 5.



Witness

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UNITED STATES PATENT OFFICE.

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ATOMIZER FOR INTERNAL-COMBUSTION ENGINES.

1,291,767.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN H. COGSWELL, a citizen of the United States, residing at Lansing, in the county of Ingham and State of Michigan, have invented certain new and useful Improvements in Atomizers for Internal-Combustion Engines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to new and useful improvements in automatic atomizers for internal combustion engines and the object in view is to produce a simple and efficient device of this nature which may be easily and quickly attached to the manifold of an engine and adapted to admit air, proportionate to the quantity of fuel passing through the manifold to the engine.

The present invention consists of a simple device of this nature which will be automatic in its action and serve to thoroughly mix the gas and air before entering the combustion cylinder, thus economizing in fuel and serving to reduce to a minimum the deposit of carbon on the inner surface of the cylinder.

My invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a sectional view showing the same as applied to a manifold.

Fig. 2 is an enlarged central sectional view through the device.

Fig. 3 is a sectional view on line 3—3 of Fig. 2.

Fig. 4 is an end view of the atomizer, and Fig. 5 is a detailed sectional view of a modification of my invention.

Reference now being had to the details of the drawings by letter, A designates the shell of the atomizer having a circumferential, angular shoulder B near one end for a wrench hold and the one end of the shell is circumferentially threaded as at C and adapted to engage the threads D formed in the marginal edge of the opening in the manifold E. Said shell, which is cylindrical shaped, has circumferential threads F at one end and H is an interiorly threaded cap fitted over said circumferential threads of the shell and the end of the cap has its inner surface conically shaped and tapering to a point, and K designate ducts through which the air is allowed to enter the shell. A valve

N, of cylindrical form, is mounted within the shell and has a conically shaped end O, conforming to the taper on the inner face of the cap and the conical portion of the valve is adapted to form a part to regulate the passage of air through the ducts K. Said valve is longitudinally channeled as at L, and R is a coiled spring which is mounted within the shell bearing against the bottom of the latter about the duct T leading through the inner threaded end and the outer end of said springs bear against the valve N and normally holds the same against the cap in the manner shown. The purpose of said spring is to normally hold the outer end of the valve in closed relation with the duct K and the tension of said spring may be adjusted by the position the cap assumes upon the threaded portion of the shell. For instance, if it is desired to increase the tension of the spring, causing a greater suction to be required to actuate the valve to permit air to enter, the cap is screwed farther toward the manifold than would otherwise be the case, the unscrewing of the cap tending to lessen the tension of the spring.

In operation, the device is applied to the manifold or to the pipe or opening between the carbureter and the bore of the cylinder and, when the engine is in operation, the suction upon the manifold as it overcomes the tension of the spring will cause the valve to unseat and draw in air in sufficient quantity to thoroughly atomize the fuel with which it becomes mixed before entering the combustion cylinder.

By the provision of a device embodying the features of my invention, I have found that the thorough mixing of the fuel with air will tend to reduce to a minimum the deposit of carbon upon the cylinder and piston and serve as a means for economizing in fuel.

What I claim to be new is:—

An atomizer for internal combustion engines, comprising a shell adapted to be attached to the manifold of an engine, and having a chambered portion, the inner portion of which is contracted, said chamber having an annular shoulder, a hollow cylindrical valve with its outer end conical shaped and provided with apertures therein, an adjustable cap interiorly threaded and

fitted over the threaded portion of said shell, the outer end of the cap having a tapering portion over the tapering portion of the valve only and with which it conforms, said
5 cap having apertures at the inner end of the tapering portion thereof, a spring within the chambered portion of the shell and bearing against said shoulder and the inner end of

the valve, and a jam nut upon the threaded circumference of the shell.

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

JOHN HENRY COGSWELL.

Witnesses:

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HENRIETTA A. KORN.