

A. C. STEWART.
THROTTLE FOR CARBURETERS.
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1,029,899.

Patented June 18, 1912

Fig. 1.

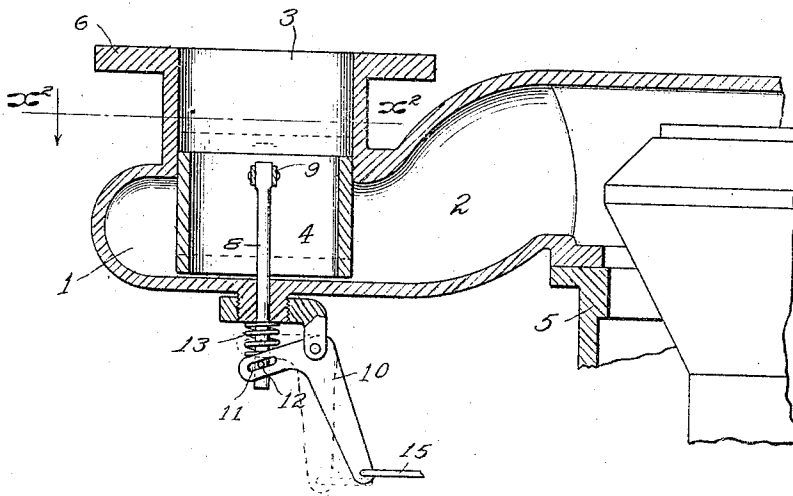
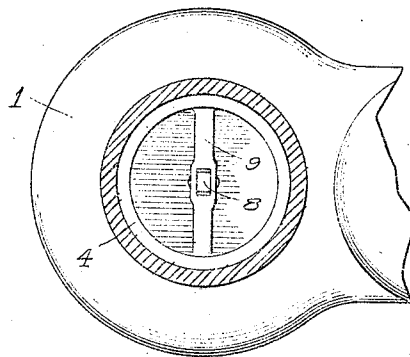


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

ALFRED C. STEWART, OF LOS ANGELES, CALIFORNIA.

THROTTLE FOR CARBURETERS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALFRED C. STEWART, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Throttle for Carbureters, of which the following is a specification.

This invention relates to a throttle for carbureters particularly designed for use with heavy fuels, and the object of the invention is to provide a throttle of such construction that any of the heavier portions of the fuel deposited in the connections from the carbureter to the throttle will be drawn up into the mixture as it passes the throttle when the engine is running with the throttle nearly closed.

The accompanying drawings illustrate the invention, and referring thereto:—

Figure 1 is a vertical section of the throttle with adjacent portion of the carbureter. Fig. 2 is a horizontal section on line x^2-x^2 Fig. 1.

The throttle comprises a casing provided with a throttle chamber 1, having an inlet means 2 and outlet means 3 and a throttle valve member 4 mounted to slide in said casing to control passage of air or mixture from the inlet to the outlet. The inlet means may extend laterally from the throttle chamber and is connected to the outlet of a carbureter or means indicated at 5 for supplying oil and air in definite proportions. The outlet means 3 consists of a tubular member adapted for connection with the intake or manifold of an engine, for example, by flange means 6. The throttle chamber 1 is preferably annular and is provided with a flat bottom, and the tubular throttle valve member 4 slides vertically within the tubular member or outlet portion 3 of the throttle casing so as to move to and from the flat bottom of the throttle chamber, the space between this tubular throttle valve member and the bottom of the throttle chamber forming an annular passage for the mixture coming from the carbureter. The tubular throttle valve member 4 may be operated in any suitable manner, for example, by means of a rod 8 extending through an opening in the bottom of the throttle chamber 1 and connected to a cross bar 9 connected to and extending transversely in the tubular throttle member, said rod 8 being operated by a lever 10 having a slot 11 engaging a pin 12 on said rod.

A spring 13 engages with the said lever 10 and with a fixed abutment on the throttle chamber and tends to move the throttle member 4 to closed position against the bottom of the throttle chamber 1, and a controlling means, such as a rod 15, is connected to said lever 10 to open the throttle when required.

In the normal operation of the engine, the carbureting device 5 operates to deliver air and oil or vapor of oil in definite proportions. In case heavy oil is used, however, the oil will not necessarily be in effective mixture with the air. A considerable portion of the oil will collect in the throttle chamber 1 which is depressed somewhat below the connection 2 to the carbureter, so that the oil will accumulate at the bottom of the throttle chamber by gravity. The throttle valve member 4 being elevated somewhat above the bottom of the throttle chamber in working position, as shown in dotted lines in Fig. 1, the mixture will pass between the bottom of the throttle valve member and the bottom of the throttle chamber and upwardly within the tubular throttle valve member and out through the outlet portion 3. Owing to the greater rapidity of motion of the air where it passes under the edge of the tubular throttle valve member 4, a considerable proportion of the oil will be entrained at this point and will pass along with the air. This entraining effect of the air on the oil increases as the tubular throttle valve member 4 is brought closer to the bottom of the throttle chamber 1.

It will be understood that when the engine is running with throttle wide open there will be but little deposition of the heavier portion of the oil, but when the throttle is nearly closed, such deposition becomes considerable and it is under these circumstances that the invention is more especially operative, as the approach of the throttle to the bottom of the throttle chamber increases the velocity of the mixture where it passes under the throttle valve.

What I claim is:—

1. A throttle for carbureters comprising a casing formed with a throttle chamber having a closed bottom, and provided with an inlet at one side located above said bottom, said inlet being provided with means for connection to the outlet of a carbureter, said casing provided with an upwardly extending tubular outlet, a tubular valve mem-

ber open at its upper end to communicate with the outlet, the lower end of said tubular valve member being movable to and from the closed bottom of the throttle chamber to control the passage of mixture between said closed bottom and the interior of the valve member, said valve member sliding and fitting in said tubular outlet to continually shut off direct communication from the throttle chamber to the outlet.

2. A throttle for carbureters comprising a casing formed with a throttle chamber having an inlet at one side provided with means for connection to the outlet of a carbureter, said throttle chamber being provided with a closed bottom located below the level of said inlet to allow condensed oil to collect on the bottom of said chamber, and said throttle chamber being provided with an outlet, a tubular valve member slid-

ably mounted within the casing and communicating interiorly with said outlet, the lower edge of said tubular valve member being movable vertically to and from the bottom of the throttle chamber to control the passage of mixture between said bottom and the interior of said tubular valve member, and to cause the oil condensed on the bottom of the throttle chamber to be sucked into the outlet through the valve member when the said tubular valve member is in nearly closed position.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 3rd day of April 1911.

ALFRED C. STEWART.

In presence of—

ARTHUR P. KNIGHT,
FRANK L. A. GRAHAM.