

UNITED STATES PATENT OFFICE.

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CARBURETOR.

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To all whom it may concern:

Be it known that I, JOHN WALTER FLOWER, a British subject, and resident of Eclipse Works, Wimborne, Dorset, England, have invented certain new and useful Improvements in or Relating to Carburetors, of which the following is a specification, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to carburetors for internal combustion engines and of the kind in which a piston controlling the air supply is variably lifted under suction from the engine said piston having mechanical connection with the valve controlling the supply of petrol or other such fuel so as to open it in proportion to the supply of air.

Fig. 1 is a view in section, partly in elevation of the improved carburetor.

Fig. 2 is a sectional view of the lower portion of the carburetor body.

Fig. 3 is a view in elevation of the piston.

The fuel inlet is at *a* and controlled by a needle valve the disc or finger end of which is seen at *b*, details of these are not shown as any suitable inlet and valve may be used. The carburetor body *c* has a transverse passage *d* leading to the outlet *e*. The lower part of the body *c* is hollow as seen at *f* and in this hollow part or cylinder is fitted piston *g* connected to rod *h* having valve end *i* controlling the fuel passing through the constricted bore *j* to the passage *d*. The space *f* acts as a cushion or dash pot for the piston and prevents irregular action of same.

In the lower part of the wall of *c* are formed angular openings *k* the outer edges of which are bevelled. Openings of slot-like-shape are provided at *k'*. Around the body *c* is a jacket *l* spaced away therefrom to leave cavity *m* which forms communication from openings *k* to the passage *d*.

The piston *g* is hollow and open to the atmosphere on its under side. In this piston are triangular openings *n* and circumferential slots *o*. Outside the lower part of the jacket *l* is a warming jacket *p*. In practice the suction of the engine is effective through the passage *d* and space *m* and lifts the piston, the rod of which may be a little slack in fit in the hole through which it moves in the wall of passage *d*. When so lifted the openings *n* and *k* and slots *o*

and *k'* are brought more or less into register and at the same time the valve *i* is raised so as to admit the correct relative proportion of petrol or other liquid fuel to mix with the air in the passage *d*. If the lift of the piston exceeds a predetermined amount the rod *h* will, owing to its increased diameter below the end of the bore *j*, reduce the annular space round the rod and reduce the flow of fuel.

In my invention the usual float chamber employed in carburetors is not required, pressure is unnecessary, the usual jet is displaced with, the fuel and air are automatically regulated to each other, the temperature of the air can be raised to ensure complete vaporization, the construction is simple and strong and there is only one moving part other than the butterfly or equivalent valve and the construction is such that the piston is cushioned in its movement.

What I claim is:—

1. A carburetor, comprising a body having a transverse fuel channel, a fuel inlet opening into said channel from above, the lower portion of the body providing a hollow space, an annular chamber encircling the hollow space and in communication therewith, said chamber communicating with the fuel channel, a piston operative in the hollow space and controlling the communication between the atmosphere and said annular chamber through the hollow space, a valve controlling the fuel inlet, and a connection between said valve and piston extending across said fuel channel.

2. A carburetor, comprising a body having a transverse fuel channel, a fuel inlet opening into said channel from above, the lower portion of the body providing a hollow space, an annular chamber encircling the hollow space and in communication therewith, said chamber communicating with the fuel channel, a piston operative in the hollow space and controlling the communication between the atmosphere and said annular chamber through the hollow space, a valve controlling the fuel inlet, a rod connecting said valve and piston and adjustable relative to the latter.

In witness whereof I have hereunto set my hand in presence of a witness.

JOHN WALTER FLOWER.

Witness:

H. FAIRBROTHER.