

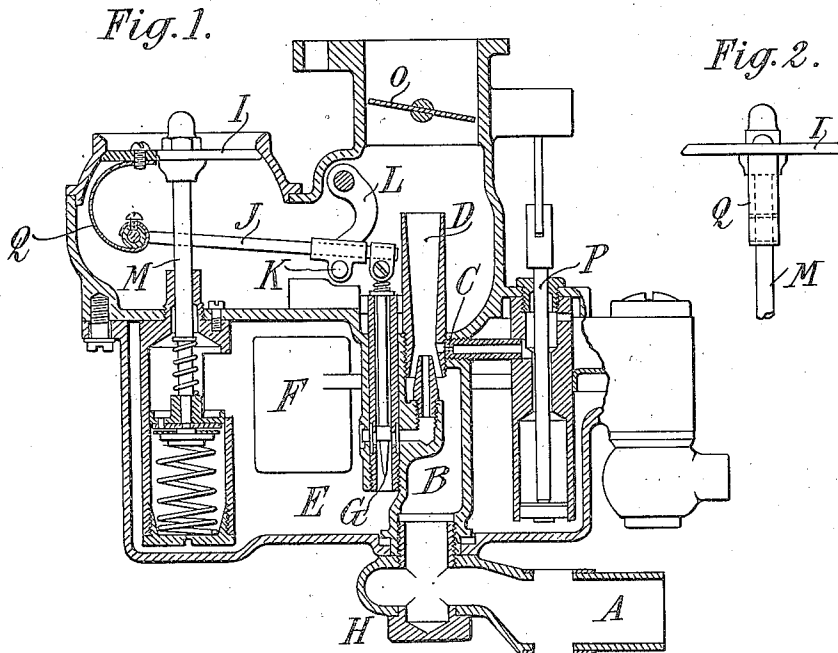
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CARBURETOR

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INVENTOR :

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CARBURETOR

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This invention relates to carburetors and aims to provide certain improvements therein.

The invention is particularly directed to improvements in that type of carburetor wherein the secondary or auxiliary air valve operates a lever which controls the gasoline supply as is the case with Schebler or some other carburetors. It is also applicable to carburetors of other types.

As is well-known, the viscosity of gasoline varies materially with temperatures, the result being that when the engine or motor draws in a given quantity of gasoline mixture on the intake stroke of the piston, this mixture has varying quantities of gasoline content, depending upon the temperature at which the carburetor is operating. For a given intake of air less gasoline will flow through the needle valve and the mixture will be poorer at the colder temperatures and richer in warmer temperatures. Usually in adjusting carburetors a compromise setting is adopted which will deliver a theoretically correct mixture at a given temperature, with the result that at warmer or colder temperatures the mixture varies to a greater or less degree from the correct proportions. The object of the present invention is to thermostatically control the supply of gasoline so that a correct mixture is always available, irrespective of the fluctuations of outside temperature.

In the drawings wherein I have shown the invention as applied to a carburetor of the Schebler type.

Figure 1 is a vertical section of a carburetor of the Schebler type having one form of the invention applied to it.

Fig. 2 is a view of the air valve detached with the thermostatic element.

Referring to the drawings, Fig. 1, let A indicate the fixed air intake, B the air passage surrounding the Venturi nozzle C and D the Venturi tube. E is the float chamber in which operates the float F which controls an admission valve to the float chamber connected with the source of gasoline supply, such as a vacuum tank. G is a gasoline needle valve controlling the passage H leading to

the Venturi tube. This needle valve may be said to give a fixed opening sufficient to supply gasoline in proportion to the air admitted through the fixed air opening but is also capable of being raised as additional quantities of mixture are required by the engine through the operation of a secondary air valve I which is connected to a so-called proportioning lever J pivoted at K to a swinging arm L which in turn is pivoted to the wall of the carburetor. As the demands of the engine are increased beyond that which can be adequately supplied by the fixed air opening, the auxiliary valve is depressed by suction, thus providing the additional air required, while at the same time the needle is lifted to produce the required gasoline flow necessary for the augmented air supply. The air valve I is usually mounted on a stem M, the lower part of which works in a dash pot within the float chamber so as to steady the operation of the valve, and prevent fluttering. O is the ordinary throttle operated by the foot pedal of a motor car and P is an auxiliary accelerating pump. This type of carburetor is well known and need not be more specifically described.

In such carburetors, as previously used, the connection between the auxiliary air valve and the proportioning lever has been a rigid arm connected with the auxiliary air valve, so that the movements of this valve, irrespective of temperature, have a fixed relation to the movements of the needle valve. According to the present invention I substitute for this fixed arm a thermostatic element which may if desired be attached directly to the disk of the air valve as shown in the drawings at Q. This thermostatic element is best formed by the usual bi-metallic thermostatic metal and may conveniently be in the bow or semi-circular shape shown one end of the element being bolted or screwed to the valve and the other end being coiled to surround the usual angled arm with which such levers are ordinarily formed. By placing the expanding side of the bi-metallic metal on the exterior of the curve, the thermostat Q will be caused to in effect contract when the temperature is increased, thus bringing the

end of the lever nearer the air valve. The result of this construction is that at warmer temperatures the needle valve is opened less in proportion to a given movement of the auxiliary air valve than is the case where a fixed arm is employed. Conversely in colder weather the thermostat unbends, thus moving the end of the lever further away from the air valve and correspondingly opening the needle valve. By properly proportioning the thermostat, these thermostatic changes compensate accurately for alterations in temperature, with the result that the flow of gasoline may be maintained constant at all temperatures, irrespective of the changes in viscosity of the gasoline. Of course, in case it may be desired to slightly enrich the mixture at very cold temperatures, this can easily be done by proper proportioning of the thermostatic element.

The construction as thus described is found to achieve very material increase in efficiency of the carburetor under varying conditions of use.

While I have shown and described one form of the invention, it will be understood that I do not wish to be limited thereto, since various changes may be made therein without departing from the spirit of the invention.

What I claim is:

1. A carburetor having a gasoline nozzle, a valve for controlling flow of gasoline through the nozzle, a secondary air passage, said secondary air passage being controlled by a valve, a connection between said gasoline valve and said air valve, and a thermostatic element included in said connection between said air and gasoline valves and adapted to shorten its effective dimension upon increase of heat.

2. A carburetor having a gasoline nozzle, a valve for controlling the flow of gasoline in said nozzle, an air valve mechanism for admitting air to said carburetor, a proportioning lever connected to said gasoline valve and said air valve, the connection between said proportioning lever and said air valve being a thermostatic element mounted upon the air valve mechanism, and said thermostatic element being so constructed that its effective dimension is shortened upon the increase of heat whereby said gasoline valve is moved nearer its seat.

3. A carburetor having a gasoline nozzle, a valve for controlling flow of gasoline through the nozzle, a lever for operating said valve, an air valve mechanism including a valve plate and a support for such valve plate, and thermostatic means for proportioning the operation of said lever to the degree of opening of said valve, said thermostatic means being mounted upon said valve mechanism and wholly carried by the latter.

4. A carburetor having a gasoline nozzle,

a valve for controlling the flow of gasoline in said nozzle, a secondary air valve mechanism comprising a valve plate and means for supporting it, a proportioning lever connected to said gasoline valve and said air valve, the connection between said proportioning lever and said air valve being a thermostatic element mounted directly upon said valve plate.

In witness whereof, I have hereunto signed my name.

CHARLES F. ROBBINS.

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