

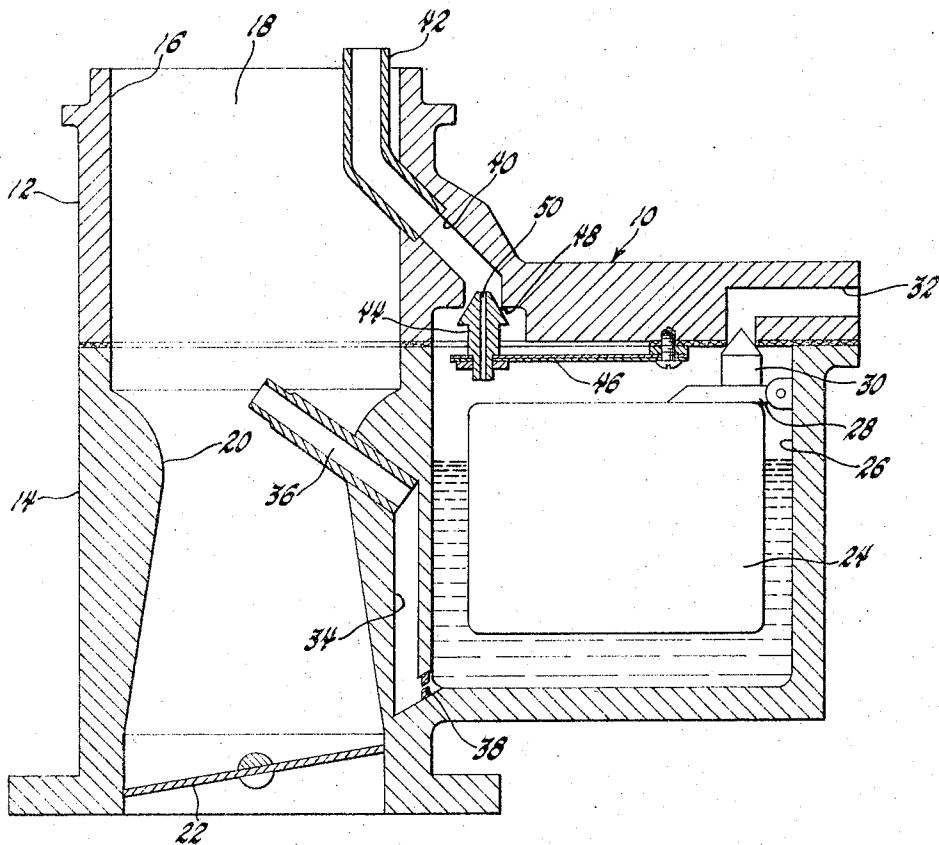
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CARBURETOR

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3,306,592

CARBURETOR

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4 Claims. (Cl. 261—39)

This invention relates to means controlling the flow of fuel vapor in an internal combustion engine carburetor.

In conventional carburetor construction a balancing passage extends from the carburetor air inlet to the fuel bowl chamber above the fuel level therein. This passage allows regulation of the pressure on the surface of the fuel in the fuel bowl in accordance with the pressure of the air entering the carburetor mixture conduit. The pressure in the air inlet then provides a base from which signals are measured to accurately meter the air and fuel delivered by the carburetor.

However, when the carburetor is operating under high temperature conditions, fuel vapor is often forced upwardly through the balancing tube into the mixture conduit. This vapor combines with and unduly enriches the air-fuel mixture formed in the mixture conduit.

This invention provides a thermostatically operated valve which closes the balancing passage under high temperature conditions to prevent the flow of fuel vapor into the mixture conduit, thereby preventing the undesirable enrichment of the air-fuel mixture.

The details as well as other objects and advantages of this invention appear in the following description and in the drawing which illustrates a sectional view of a carburetor including the thermostatically operated valve provided by this invention.

Referring to the drawing, a carburetor 10 includes an air horn section 12 mounted on a fuel bowl section 14. A downdraft mixture conduit 16 extends through carburetor 10 and includes an air inlet 18 within the air horn section 12, a venturi 20 and a throttle valve 22.

A float pontoon 24, disposed within a fuel bowl chamber 26, is pivotally mounted on a float arm 28 and positions an inlet valve 30 which controls fuel flow through an inlet passage 32. The float mechanism is adapted to maintain a substantially constant level of fuel within bowl chamber 26. A fuel passage 34 extending from bowl chamber 26 delivers fuel to a nozzle 36 which discharges into venturi 20. The fuel discharged mixes with air flowing through mixture conduit 16 to form a combustible charge. A metering orifice 38 within passage 34 controls the rate of fuel flow through the nozzle 36.

A balancing passage 40 extends from the top of fuel bowl chamber 26 and terminates in an impact tube 42 within air inlet 18. Passage 40 and tube 42 control the pressure above the surface of the fuel in bowl chamber

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26 in accordance with the pressure of air flow through air inlet 18.

A valve 44 is secured to a thermostatic element 46 and cooperates with a valve seat 48 at the end of passage 40. Under conditions of high temperature, valve 44 seats on 48 to restrict flow through passage 40 and reduces the delivery to mixture conduit 16 of fuel vapors evaporated within bowl 26. By disposing the valve 44 and thermostatic element 46 within the bowl chamber 26, the valve is readily responsive to the temperatures which determine the amount of fuel evaporated from the bowl 26.

An aperture 50 extends through the valve to allow some ventilation of the fuel bowl chamber 26, preventing an excessive buildup of pressure within bowl 26.

As thus described, this invention provides a simple and inexpensive carburetor control which prevents overenrichment of the air-fuel mixture formed by the carburetor under high temperature operating conditions.

I claim:

1. An internal combustion engine carburetor comprising a mixture conduit having an air inlet, a fuel bowl, means to maintain fuel in said bowl at a substantially constant level, a fuel passage extending from said fuel bowl and adapted to discharge fuel into said mixture conduit to form an air-fuel mixture, a balancing passage extending between said air inlet and said fuel bowl above the fuel level therein and thermostatically operated valve means adapted to restrict flow through said balancing passage under high temperature conditions to thereby prevent undue enrichment of the air-fuel mixture formed in said mixture conduit.

2. The carburetor of claim 1 wherein said valve means restricts flow through said balancing passage in response to an increase in the temperature within said fuel bowl to reduce the flow of fuel vapor to said mixture conduit.

3. The carburetor of claim 1 wherein said balancing passage includes a valve seat and wherein said valve means comprises a member contacting said seat to restrict flow therethrough and a thermostatically responsive bimetallic arm operating said member.

4. The carburetor of claim 3 wherein said member has an opening therethrough permitting restricted flow through said balancing passage.

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