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CARBURETORS FOR INTERNAL COMBUSTION ENGINES

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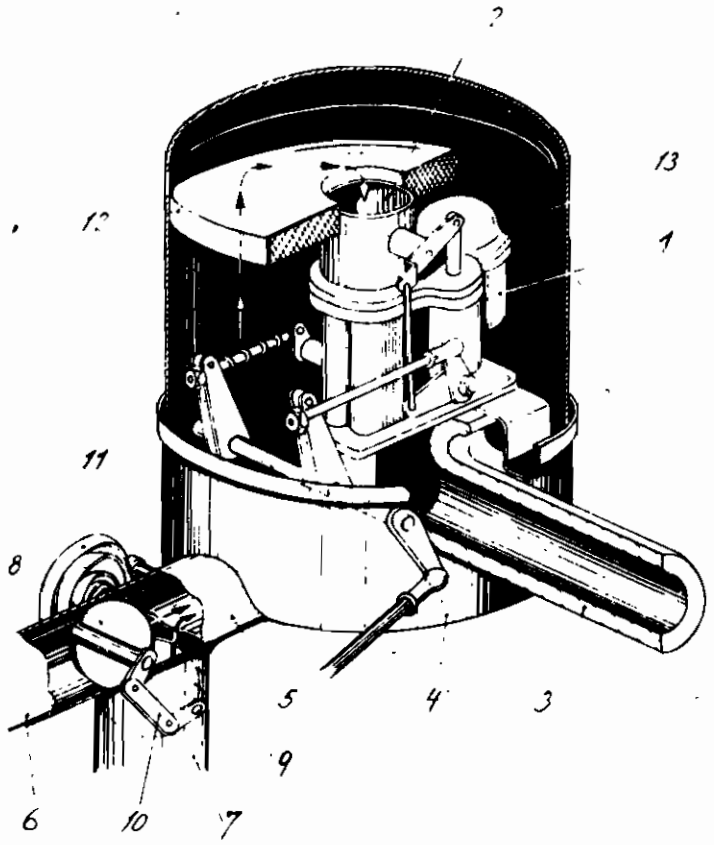

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CARBURETORS FOR INTERNAL COMBUSTION ENGINES

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The carburetors of internal combustion engines are exposed, as is known, during operation to the influence of the heat rays radiated by the cylinder wall and specially by the exhaust pipes. The effect of these heat rays can be such as to cause already during normal operation the boiling of the carburetor and thus an insufficient supply of combustible mixture to the combustion chambers will be the consequence.

To prevent particularly the float chamber from being excessively heated, it has been already proposed to place the intake pipe round the float chamber of the carburetor so that it can be passed over by the cool fresh air current. This form of embodiment easily may have the consequence of supercooling the float chamber which has an unfavourable effect on the supply of combustible mixture.

In order to protect the carburetor as well against warm influences as against cold ones, the carburetor together with its intake passage is, according to the invention, covered in all round by a cage. Into this cage a tube uniting a fresh air tube and warm air tube is leading. The fresh air tube takes in the cold air at any place remote from the engine, the warm air tube the air in proximity of the exhaust pipe. Both tubes are provided with a throttle each which are connected with each other in a certain way by a lever mechanism. The adjustment of the two throttles is effected either manually or automatically by a bimetallic spiral, a thermostat or the like which cause that only such a quantity of fresh air or warm air is permitted to enter the guarding cage as is necessary to obtain the desired temperature around the carburetor. In the upper part of the guarding cage there is arranged a filter through which the air is lead for cleaning to the upper part of the carburetor and from there to the intake passage of the carburetor. The cage is preferably provided with a removable cover.

The use of a cage brings about at the same time a further advantage, i. e. it is acting as intake silencer particularly in the case when the cage, according to the invention, is made of or lined with a silencing material.

The drawing shows one form of embodiment of the invention.

The carburetor 1 has the usual form. The fresh air is taken in through a passage 2 and the combustible mixture is lead through the conduit 3 into the combustion chamber of the internal combustion engine. The carburetor 1 is, according to the invention, completely surrounded by a cage 4 serving to screen or guard the carburetor. This cage 4 is provided at one side with a tube 5, into which two branch tubes 6 and 7 are discharging. Through the branch tube 6 fresh air which is caught in some way or other from outside, is lead to the tube 5 and from there to the cage 4. The warm air for the tube 7 is likewise taken in from outside but at a place which is heated by the exhaust gases.

In each of the tubes 6 and 7 a throttle 8, resp. 9 is provided which through a lever mechanism 10 are in positive connection with each other. The throttles 8, 9 are controlled manually or automatically by means of a bimetallic spiral, a thermostat 11 or the like, adjusting the throttles 8 and 9 in response to the air temperature surrounding the carburetor, so that either more warm air can flow through the tube 7 into the cage 4 or more cold air through the tube 8.

The upper part of the cage 4 contains a filter 12. Into the space above the filter is projecting the intake passage 2 for the carburetor, so that the air for the carburetor is taken from this space after previously being cleaned through the filter 12.

The cage 4 is preferably executed with a detachable cover 13 to have the possibility of cleaning or replacing the filter after a certain time.

As already stated the automatic adjustment can be effected by a bimetallic spiral, a thermostat or a similar organ responding to variations in temperature. This organ is preferably arranged at a protected place not exposed to the fresh air or even in the guarding cage 4 itself.

The manner of action of the new carburetor is characterized by the fact that as long as under the guarding cage or resp. under the cowling of a motor vehicle a normal temperature is prevailing, the fresh air tube remains closed. The engine is charged in this case with air preheated by the warm air tube. With increasing temperature below the cowling resp. the guarding cage, the warm air tube is gradually closed by the thermo-element and the fresh air tube opened and inversely.

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