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A. OAMKA

AIR CONTROL FOR CARBURETORS

Filed July 26, 1924

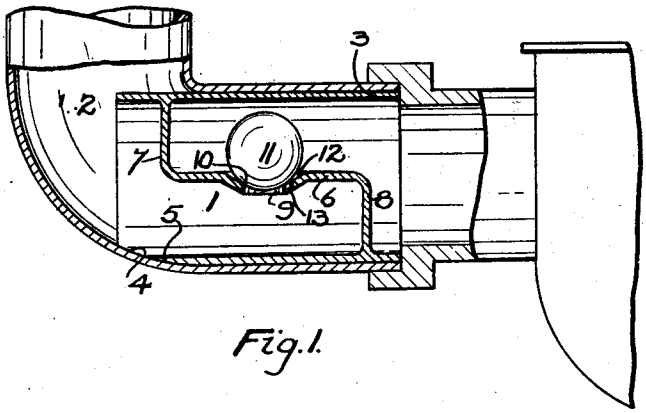


Fig. 1.

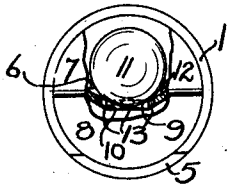


Fig. 2.

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UNITED STATES PATENT OFFICE.

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AIR CONTROL FOR CARBURETORS.

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To all whom it may concern:

Be it known that I, AUGUST OAMKA, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Air Controls for Carburetors, of which the following is a specification.

This invention relates to improvements in air controls for carburetors, and consists essentially in the provision of means whereby the amount of air admitted into the intake side of the carburetor is automatically regulated by the degree of suction exerted by the engine; thereby insuring maximum efficiency from the engine at all times on account of the fact that it is always supplied with a uniform mixture. This regulation is effected by a ball valve adapted to rest on a horizontally disposed valve seat, so that the exposed cross sectional area of the valve opening varies according to the extent of the lift of the ball, which, in turn, is dependent upon the amount of suction above referred to.

A second object of the invention is to supply a ball valve of such diameter, and so located within the device with regard to the incoming air, that the latter strikes the ball and is diverted against the sides of the device off which it again rebounds. In this way cross currents of air are set up, which, when they enter the carburetor, break up the gasoline more thoroughly, cause more complete atomization of the fuel, and consequently produce a more powerful explosion in the engine. Moreover, the bypass openings, when supplied, are also so located that air entering through them will be similarily diverted by the sides of the ball valve.

Another object of the invention is to so design the device that when it is in position within the hot air pipe, and resting against the bell-mouthed end of the air intake of the carburetor, it is held firmly, without possibility of its moving in any direction, without the aid of any fastening means other than those ordinarily employed to make the joint between the hot air pipe and the carburetor air intake.

A further object of the invention is to provide a valve seat so surrounded by an outwardly and upwardly inclined annular surface that the ball valve, although permitted a limited free movement in all directions, cannot escape from within the body of the device. The provision of the annular surface also insures the ball valve returning onto its seat immediately the suction ceases.

With these and other objects in view, my invention consists in certain novel construction and combination of parts hereinafter more fully described with the aid of the accompanying drawings and claimed.

Figure 1 illustrates a sectional view of the invention in position within a hot air pipe, and bearing against the bell-mouthed air intake of a carburetor.

Figure 2 is an end elevation of the device, partly in section.

Referring more particularly to the drawings, 1 indicates the cylindrical body of the device, which is a good push fit into the hot air pipe 2, and has one end bearing against the inlet 3 of the carburetor. The length of the device is such that when one end thereof bears against the bell-mouthed inlet 3, the other end will be in contact with the internal radius 4 of the hot air pipe. In this way longitudinal movement of the device is rendered impossible. The curved portion 5 of the body 1 is so shaped as to engage the internal radius 4, so that the device is prevented from turning. This is done as it is necessary to maintain the longitudinal wall 6 in a substantially horizontal position.

The body 1 is divided into two parts by the transverse walls 7 and 8, connected by the longitudinally disposed wall 6, through which latter a circular opening 9 is provided. The upper side of this opening forms a valve seat 10, on which the ball valve 11 is adapted to rest. Round the valve seat 10, and substantially concentric therewith, is an upwardly and outwardly inclined annular surface 12, formed within the wall 6. This surface 12 is so placed that though the ball valve 11 is allowed free movement in all directions within the device, it cannot pass between the upper edge of the said annular surface and the inner circumference of the body 1.

When the carburetor is in operation suction is exerted which raises the ball valve 11 off its seat 10, and allows air to pass through the opening 9. The size of the ball is such that air must strike it and be deflected against the inner circumference of the body 1 and the upper face of the longitudinal wall 6, off either of which the air

again rebounds so that cross currents of air are created. It is also found that the deflected air causes the ball valve 11 to spin, so that each time a different portion of the ball rests on the seat 10; in this way the possibility of wear on the surface of the ball is eliminated, and obviously the extent of the suction determines the amount of the lift of the ball valve.

For starting, bypass openings 13 may be arranged round the hole 9, so that air passing through these openings also strikes the sides of the ball valve and is deflected thereby.

While in the foregoing the preferred embodiment of the invention has been described, it is understood that I may make alterations and modifications in the construction, provided the said alterations and modifications fall within the scope of what I claim.

What I claim as my invention and desire to secure by Letters Patent is:

1. An air control for carburetors comprising a cylindrical body portion divided interiorly by two transverse walls each extending across substantially half the diameter of said body portion, said transverse walls being connected by a longitudinally disposed horizontal wall having an opening therethrough, a valve seat on the upper face of said opening, a ball valve, and an upwardly and outwardly disposed annular surface substantially concentric with said valve seat and forming portion of said horizontal wall, in combination with means within said body portion for maintaining said valve seat in a substantially horizontal position within a hot air pipe.

2. An air control for carburetors comprising a cylindrical body portion divided interiorly by two transverse walls each extending across substantially half the diameter of said body portion, said transverse walls being connected by a longitudinally disposed horizontal wall having an opening therethrough, a valve seat on the upper face of said opening, and a ball valve, said ball valve having a limited free movement in all directions in the upper part of said body portion, and prevented from escaping therefrom by the propinquity of the upper edge of an inclined annular surface to the inner circumference of said body portion, in combination with means within said body portion for maintaining said valve seat in a substantially horizontal position within a hot air pipe.

3. An air control for carburetors comprising a cylindrical body portion, and means for preventing both longitudinal and rotary movement of said body portion when in position within a hot air pipe and having one end resting against a bell-mouthed intake of a carburetor consisting solely in the size and shape of said body portion and without the use of any auxiliary fastening means, in combination with a horizontal valve seat and a ball valve within said body portion.

4. An air control for carburetors comprising a cylindrical body portion adapted to fit within a hot air pipe and having one end shaped so as to fit on and bear against an internal radius in said hot pair pipe throughout part of the diameter of said body portion, in combination with transverse walls within said body portion connected by a longitudinally disposed wall having an opening therethrough, a valve seat on the upper face of said opening, and a ball valve.

5 An air control for carburetors as described in claim 1, wherein bypass openings are arranged concentrically round the valve seat, said bypass openings breaking directly into the side of said valve seat.

AUGUST OAMKA.