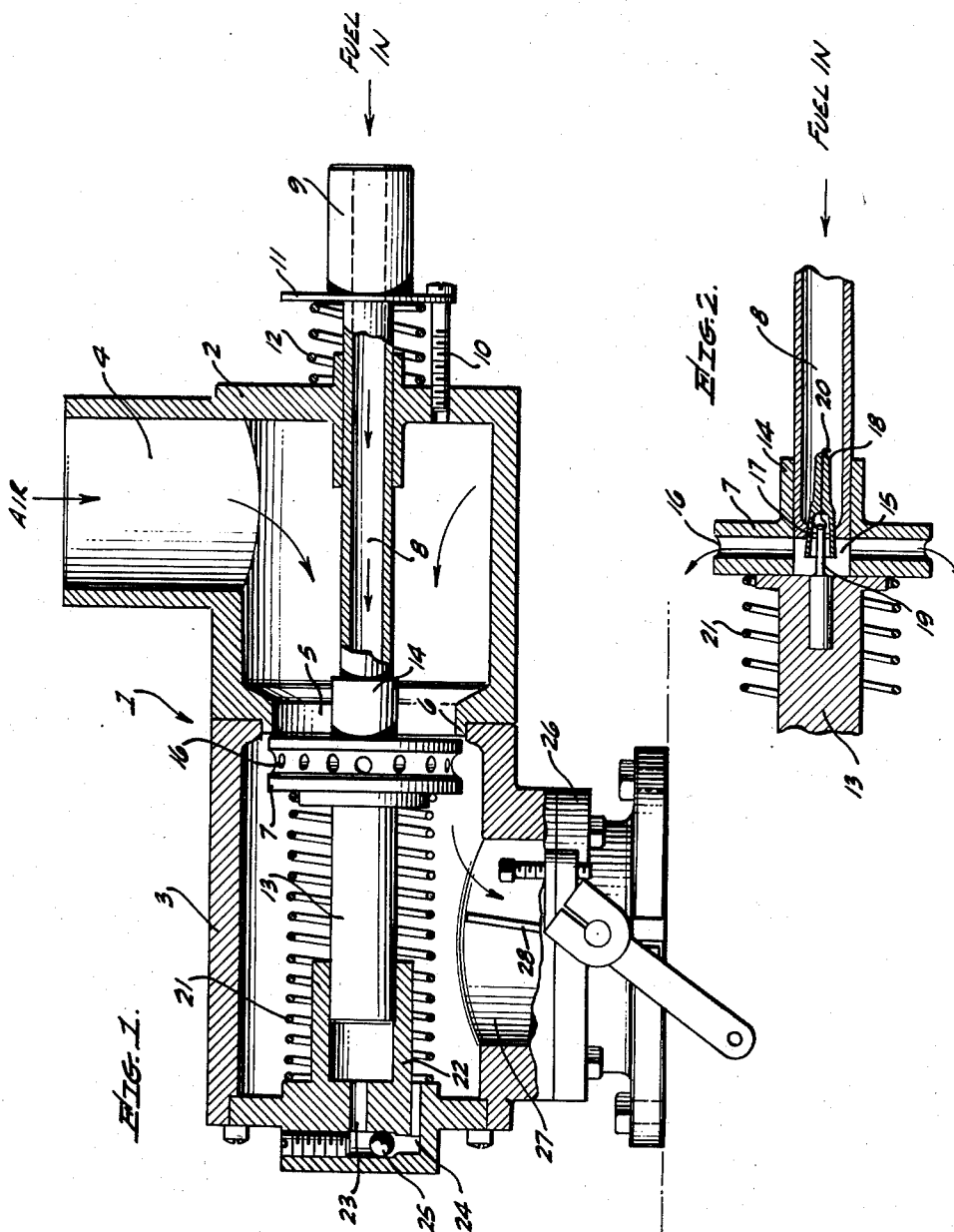


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PRESSURE TYPE CARBURETOR

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PRESSURE TYPE CARBURETOR

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This invention relates to a pressure type carburetor, and particularly to one which feeds gaseous fuel to an engine, and especially a hydrocarbon gaseous fuel, such as propane or the like. The gaseous fuel is fed to the carburetor under pressure greater than atmospheric.

An object of my invention is to provide a novel gas carburetor wherein the incoming fuel passes through an intake tube and past a needle valve, the needle valve being moved relative to a seat when the distributor disc moves under impact of the incoming air.

Another object of my invention is to provide a novel gas carburetor of the character stated in which the distributor disc moves relative to the fuel intake pipe and is urged towards its seated position by a spring which opposes the pressure of the incoming air.

Another object of my invention is to provide a novel gas carburetor of the character stated in which the fuel is fed outwardly through ports or openings in a distributor disc, the air moving around the periphery of the distributor disc and thus entrains the gaseous fuel from around the periphery of the disc.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing

Figure 1 is a longitudinal sectional view of my gas carburetor.

Figure 2 is a fragmentary transverse sectional view of the fuel intake pipe and the distributor disc adjacent thereto.

Referring more particularly to the drawing, the numeral 1 indicates the carburetor housing which includes the air intake portion 2 and the mixing portion 3. The air portion 2 includes an air intake passage 4 through which air is drawn due to the partial vacuum exerted in the engine, and this air passes into the mixing portion 3 of the carburetor through the opening 5, as will be described. A seat 6 is provided in the opening 5 to receive the distributor disc 7 which will be more specifically described. A fuel intake pipe 8 extends horizontally into the air portion 2 of the carburetor and the fuel intake pipe (not shown) is threaded into the fitting 9 on the outer end of the pipe 8. The pipe 8 is adjustable longitudinally within the portion 2 of the carburetor by means of an adjusting screw 10 which passes through the flange 11 of the fitting 9 and screws into one wall of the air portion 2, substantially as shown. A spring 12 bears against the flange 11 tending to urge the pipe 8 outwardly against a stop formed by the head of the bolt 10. Thus the pipe 8 can be adjusted inwardly or outwardly for the purpose of controlling fuel air mixture, as will be further described. The distributor disc 7 includes a post 13 which projects from one side of the disc and a sleeve 14 which projects from the other side of the disc. The sleeve 14 surrounds the pipe 8 adjacent the inner end thereof and acts as a guide for the

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disc 7, and also prevents air from moving between the outside of the pipe 8 and the inner bore 15 of the disc 7. A plurality of radial ports or openings 16 are formed in the disc 7 and extend from the inner bore 15 to the periphery of the disc. The purpose of these openings is to permit fuel to flow radially outwardly from the bore 15 which communicates with the pipe 8, and thus carrying the fuel into the path of the incoming air to permit the fuel to entrain with the air and be carried into the engine. A seat 17 is formed in the inner end of the pipe 8 and a needle valve 18 is mounted on the disc 7 and moves relative to the seat 17 to control the amount of fuel which passes into the ports 16. The needle valve 18 is attached to a pin 19 which extends axially into the bore 15 and a wire 20 extends through the needle valve 18 and hooks onto the pin 19, thus mounting the needle valve on the pin and also permitting some movement of the needle valve so that it will seat properly on the seat 17. A spring 21 bears against the disc 7 and urges the disc against the seat 6; the spring 21 opposing the unseating forces against the disc 7 which include the vacuum of the engine and the impact pressure of the air coming in through the air intake 4. The post 13 extends into a cylinder 22, which cylinder is mounted on or may be an integral part of the end wall of the mixing chamber 3. The cylinder 22 acts as a dashpot to damp the movement of the disc 7 so that the opening and closing movement of the disc will be steady and uniform. A port 23 extends from the inner end of the cylinder 22 and opens into a vent port 24. A ball check 25 is mounted in the vent port 24 to restrict the vent port and prevent excessive movement of the post 13 and the disc 7. A flange fitting 26 is secured to the carburetor housing 1 at the outlet throat 27 and this flanged fitting is bolted to the engine intake manifold, all of which is usual and well known in the art. A throttle valve 28 may be mounted in the fitting 26 to control the flow of combustible mixture into the engine.

In operation

The spring 21 holds the disc 7 against the seat 6 until the engine starts, at which time the disc 7 moves away from the seat against the tension of the spring. This movement of the disc 7 carries the needle valve 18 away from the seat 17, permitting fuel to pass through the pipe 8 and thence radially outwardly through the ports 16 to the periphery of the disc 7 where the fuel is mixed with the incoming air which is drawn through the intake port 4. The fuel and air are then thoroughly mixed in the mixing chamber 3 and pass into the throat 27 of the carburetor and thence into the engine. The relative position of the needle valve 18 and the seat 17 may be adjusted by threading the screw 10 into or out of the carburetor housing 1, thus longitudinally adjusting the pipe 8.

Having described my invention, I claim:

1. A pressure type carburetor comprising a housing, said housing having a mixture outlet thereon and a connection means to attach said mixture outlet to an intake manifold, said housing having an air intake therein spaced from said mixture outlet, a seat within said housing arranged between said mixture outlet and said air intake, a fuel intake pipe extending into said housing from the outside thereof and a fuel supply pipe attached to the outer end of the fuel intake pipe, adjusting means engaging the fuel intake pipe to adjust the position of the intake pipe within said housing, a disc positioned within the housing and adjacent said seat, said disc resting on the seat in one position of the disc to close the air passage between the air intake and the mixture out-

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let, said disc having ducts therein extending from the center thereof to the periphery, means on the disc telescoping over the fuel intake pipe, a seat within the fuel intake pipe adjacent said disc, and a needle valve on said disc cooperating with the seat to vary the amount of fuel passing out of the fuel intake pipe, and spring means bearing against one side of the disc and urging said disc onto said first named seat.

2. A pressure type carburetor comprising a housing, said housing having a mixture outlet thereon and a connection means to attach said mixture outlet to an intake manifold, said housing having an air intake therein spaced from said mixture outlet, a seat within said housing arranged between said mixture outlet and said air intake, a fuel intake pipe extending into said housing from the outside thereof and a fuel supply pipe attached to the outer end of the fuel intake pipe, a disc positioned within the housing and adjacent said seat, said disc resting on the seat in one position of the disc to close the air passage between the air intake and the mixture outlet, said disc having ducts therein extending from the center thereof to the periphery, means on the disc telescoping over the fuel intake pipe, a seat within the fuel intake pipe adjacent said disc, and a needle valve on said disc cooperating with the seat to vary the amount of fuel passing out of the fuel intake pipe, and spring means bearing against one side of the disc and urging said disc onto said first named seat, a post extending from said disc, a cylinder within the housing, said post extending into the cylinder, said cylinder having an air outlet port therein to restrain the air excluded from the cylinder by said post.

3. A pressure type carburetor comprising a housing, said housing having a mixture outlet thereon and a connection means to attach said mixture outlet to an intake manifold, said housing having an air intake therein spaced from said mixture outlet, a seat within said housing arranged between said mixture outlet and said air intake, a fuel intake pipe extending into said housing from the outside thereof and a fuel supply pipe attached to the outer end of the fuel intake pipe, adjusting means engaging the fuel intake pipe to adjust the position of the intake pipe within said housing, a disc positioned within the housing and adjacent said seat, said disc resting on the seat in one position of the disc to close the air passage between the air intake and the mixture outlet, said disc having ducts therein extending from the center thereof to the periphery, means on the disc telescoping over the fuel intake pipe, a seat within the fuel intake pipe adjacent said disc, and a needle valve on said disc cooperating with the seat to vary the amount of fuel passing out of the fuel intake pipe, and spring means bearing against one side of the disc and urging said disc onto said first named seat, a post extending

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tending from said disc, a cylinder within the housing, said post extending into the cylinder, said cylinder having an air outlet port therein to restrain the air excluded from the cylinder by said post.

4. A pressure type carburetor comprising a housing, said housing having a mixture outlet thereon and a connection means to attach the mixture outlet to an intake manifold, said housing having an air intake therein, a seat within the housing and arranged between said mixture outlet and said air intake, a disc in the housing, said disc resting on said seat in one position of the disc, a fuel intake pipe extending into the housing in axial arrangement to said disc from the outside thereof and a fuel supply pipe attached to the outer end of the fuel intake pipe, said disc including a means thereon telescoping the fuel intake pipe, said disc having a plurality of ducts therein extending from the center thereof to the periphery and through which fuel passes, a seat within the fuel intake pipe adjacent said disc, a needle valve mounted on the disc and cooperating with the last named seat to control fuel flow thereby, adjusting means engaging the fuel intake pipe to longitudinally move said fuel intake pipe within said housing, and spring means bearing against said disc and urging said disc towards said first named seat.

5. A pressure type carburetor comprising a housing, said housing having a mixture outlet thereon and a connection means to attach the mixture outlet to an intake manifold, said housing having an air intake therein, a seat within the housing and arranged between said mixture outlet and said air intake, a disc in the housing, said disc resting on said seat in one position of the disc, a fuel intake pipe extending into the housing in axial arrangement to said disc from the outside thereof and a fuel supply pipe attached to the outer end of the fuel intake pipe, said disc including a means thereon telescoping the fuel intake pipe, said disc having a plurality of ducts therein extending from the center thereof to the periphery and through which fuel passes, a seat within the fuel intake pipe, a needle valve mounted on the disc and cooperating with the last named seat to control fuel flow thereby, adjusting means engaging the fuel intake pipe to longitudinally move said fuel intake pipe within said housing, and spring means bearing against said disc and urging said disc towards said first named seat, a post extending from said disc, dashpot means within the housing, said post extending into the dashpot means to control movement of said disc.

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