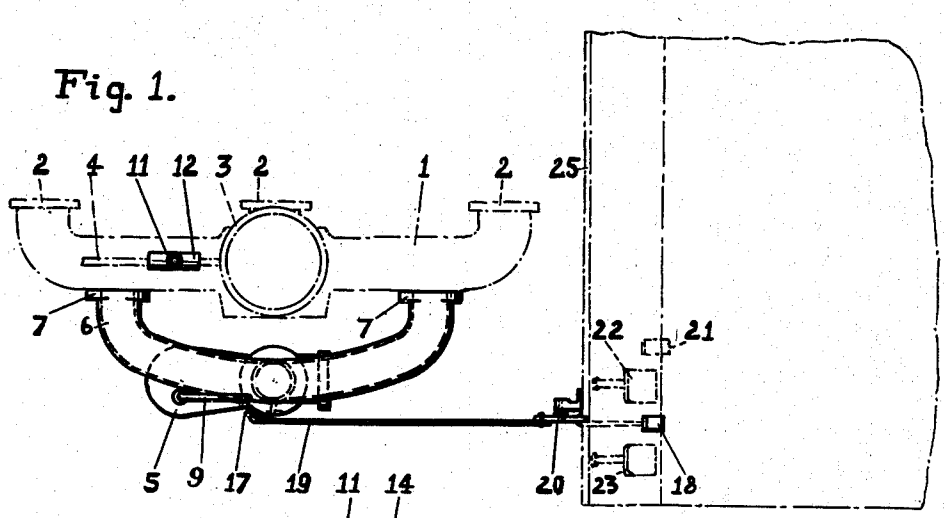
July 27, 1948. M. R. WILLIAMS 2,446,034

AUXILIARY INDEPENDENT CARBURETOR

Filed March 4, 1947

Fig. 1.



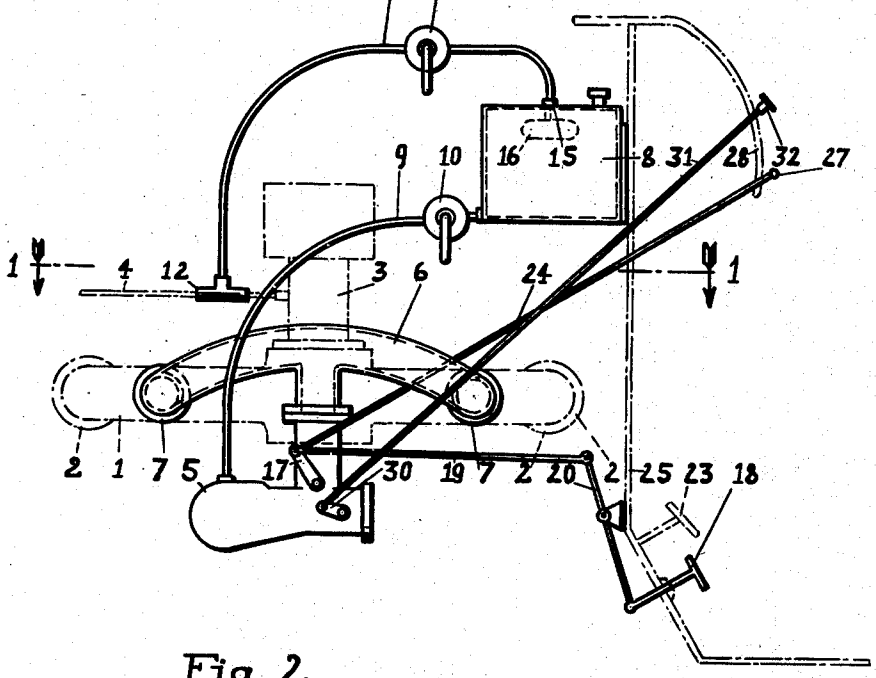


Fig. 2.

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AUXILIARY INDEPENDENT CARBURETOR

Max R. Williams, Baltimore, Md.

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1 Claim. (Cl. 123—127)

1

This invention relates to carbureting devices for internal combustion engines using liquid fuel. This invention has for its object, broadly, to provide an oil or gasoline driven engine with an auxiliary carburetor adapted to deliver to the intake manifold a mixture of fuel and air obtained from two sources, one from the ordinary carburetor and the other from the auxiliary carburetor.

Another object of the present invention is the provision of a device of the character described which will allow the use of two fuels, whereby in starting the engine a lighter or more volatile fuel may be employed, and after the engine has been started, another fuel which may be less volatile, heavier or less expensive, may be utilized.

Still another object of the present invention is the provision of a device of the character described which is provided with independent control means for the auxiliary carburetor, so that either carburetor can be used alone, or both together if a temporary increase in power is desired; this will result in an additional accelerator pedal that can be operated either with the right or the left foot, thus relieving a driver on long trips from the tiresome holding down of one pedal with the same foot.

A further object of the present invention is the provision of a device of the character described which will aid greatly in starting the engine more speedily in cold weather, without "pumping" of the accelerator or "grinding" of the starter, because the auxiliary carburetor is supplied with fuel by gravity from an auxiliary fuel tank; the latter also provides reserve fuel and can be connected not only to the auxiliary carburetor but also to the ordinary carburetor for providing the latter with fuel by means of gravity if the fuel pump should be out of order.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawings the preferred forms of the invention have been shown.

In said drawings:

Figure 1 is a top plan view of a preferred embodiment of my invention partially in section on the line 1—1 of Figure 2; and

Figure 2 is a side elevation of the same.

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Similar reference characters refer to similar parts throughout the several views.

In the drawing the parts which do not relate to my present invention are indicated in dash-and-dotted lines. One of these parts is the ordinary intake manifold 1, which is secured to an internal combustion engine (not shown) by means of the flanges 2, and to which is connected in a well-known manner an ordinary carburetor 3. The main fuel line 4 leads from the carburetor 3 to the main fuel tank (not shown).

The auxiliary carburetor 5, which may be of any suitable shape or design or construction—that shown in the drawing forming no part of my present invention—is connected to the intake manifold 1 by any suitable means. If my new and improved auxiliary source of fuel-air mixture is to be installed into an existing power plant, the carburetor 5 preferably is connected to the manifold 1 by means of an auxiliary manifold 6, as in the instance shown. In this case the manifold 6 is provided with lateral openings, and the flanges 7 of the auxiliary manifold are secured around said openings. If my device is to be built into new cars, the manifolds 2 and 6 can be cast as a unit with suitable openings for the carburetors 3 and 5.

The auxiliary carburetor 5 is provided with fuel from an auxiliary receptacle or fuel tank 8 through a pipe 9, which is provided with a shut-off valve 10. The receptacle 8 preferably is arranged above the carburetors 3 and 5, so that the fuel will be forced to the carburetor by means of gravity, independent of the working of a fuel pump. I prefer also to connect the receptacle 8 to the main carburetor 3 by means of a branch fuel line 11, which is connected to a T-piece 12 in the main fuel line 4. The branch line 11 preferably is provided with a manually operated shut-off valve 14 and another valve 15 which is controlled by a float 16 (Figure 2).

The throttle lever 17 of the carburetor 5 is actuated by an independent pedal 18 connected thereto by means of the rod 19 and a bell crank lever 20. The pedal 18 preferably is spaced apart from the accelerator pedal 21 (Figure 1) which actuates the throttle of the carburetor 3 in a well known manner. This arrangement makes it possible to depress one of the pedals 18 and 21 with the right foot and the other with the left foot. The pedal 18 preferably is located between the brake pedal 22 and the clutch pedal 23, although it can also be located at some other convenient place near the driver's seat of a car, truck, tractor or the like. The throttle lever

17 is also connected to a hand throttle control rod 24 which is extended through the fire wall 25 and which terminates into a handle 27 at the instrument panel 28. The carburetor 5 is further provided with an independent choke control which is actuated by the lever 30, the rod 31, and the handle 32.

This setup can be used on almost any car, truck, or tractor, old or new, with variations to suit the different makes and models.

These carburetors 3 and 5, which preferably are of different sizes, are absolutely independent of each other. Either may be used at any time without the other, or they may be used together. Change from one to the other is accomplished simply by changing the foot from one throttle pedal to the other.

Three stages of performance are available: (*a*) Great economy with good performance—(small carburetor alone), (*b*) Regular performance and economy—(regular carburetor), (*c*) Super performance when desired—(both carburetors together).

Great economy is achieved by use of the small carburetor alone.

Great increase in power and speed is obtained by using both carburetors at the same time. This extra power is extremely useful in a quick getaway, in passing, anywhere, especially up long grades or climbing steep hills and mountains, and is extra useful when towing a trailer and in many other cases.

Two kinds of fuel may be used, such as gasoline and kerosene, changing at will, and instantly, from one to the other, or mixing them. This feature is particularly desirable for tractors, though it works well with cars and trucks. To use two kinds of fuel, one closes shut-off valve 14 and puts kerosene in the main tank and gasoline in the small tank 8 for starting. The change from one fuel to the other is made by merely changing throttles.

The extra carburetor 5 and the controls 18, 29 and 32 will cause no confusion in the operation of a car by an inexperienced driver, as they need not be used if not desired, and the regular controls 21, 22 and 23 do not have to be altered in any way.

Since certain changes may be made in the above

article and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claim is intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which as a matter of language might be said to fall therebetween.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent is:

In an internal combustion engine, an auxiliary source of fuel-air mixture comprising an auxiliary manifold which is permanently connected to the intake manifold of the engine, an auxiliary carburetor connected to said auxiliary manifold, an auxiliary fuel receptacle being located above both the auxiliary carburetor, and the carburetor which is normally connected to the intake manifold of the engine, a branch of the main fuel line, which line leads from the last mentioned carburetor to the main fuel receptacle, being extended into said auxiliary fuel receptacle and provided with a manually controlled shut-off valve as well as with a float controlled valve, an independent auxiliary fuel line provided with a shut-off valve connecting said auxiliary fuel receptacle to said auxiliary carburetor, an independent accelerator pedal being connected to the throttle of said auxiliary carburetor, and an independent choke control and hand throttle control being provided for said auxiliary carburetor, all substantially as described.

MAX R. WILLIAMS.

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