April 12, 1960 G. L. OLSON 2,932,495

MECHANICAL CARBURETOR

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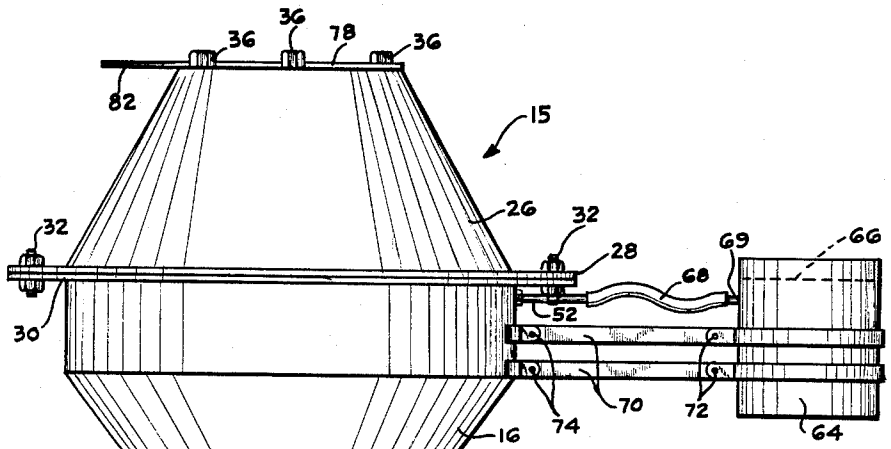

Fig. 1

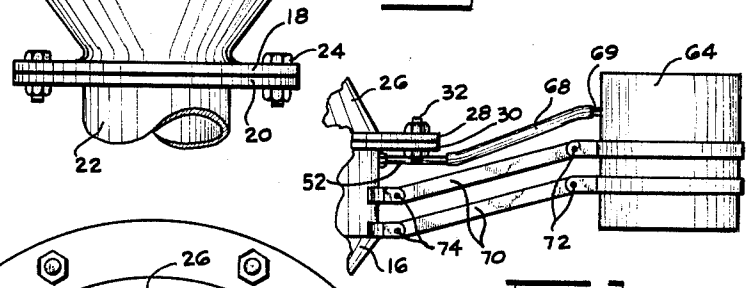

Fig. 3

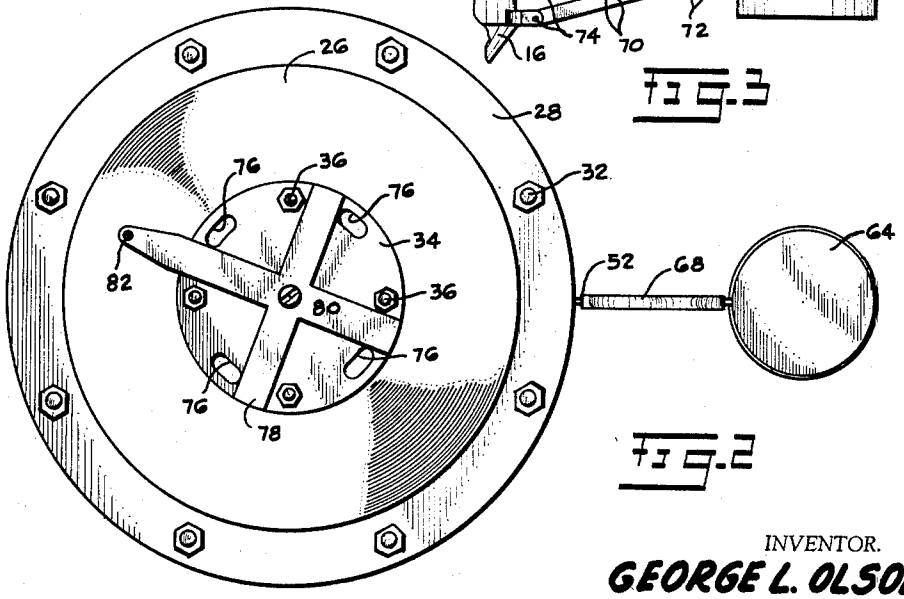

Fig. 2

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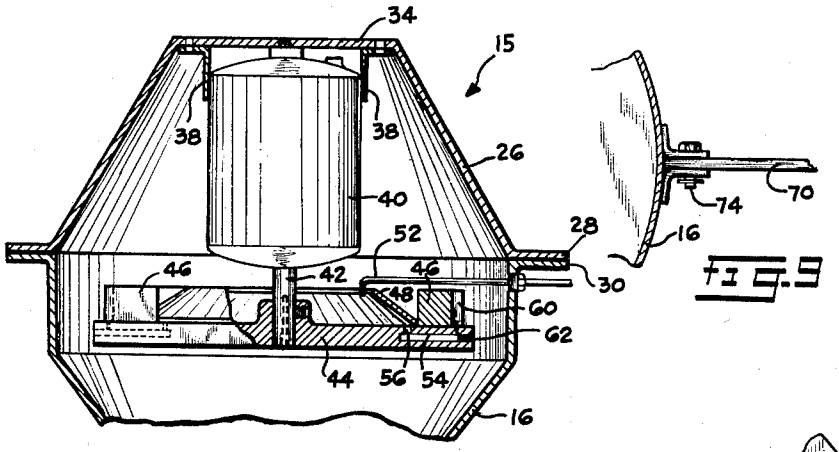

FIG. 3

FIG. 4

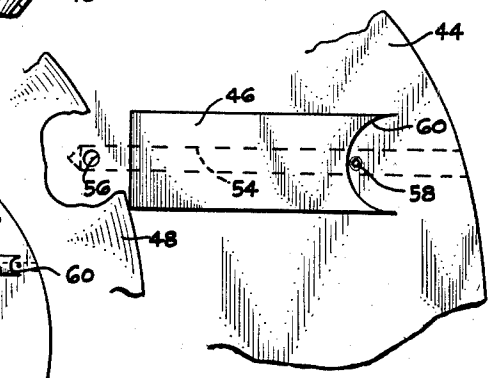

FIG. 6

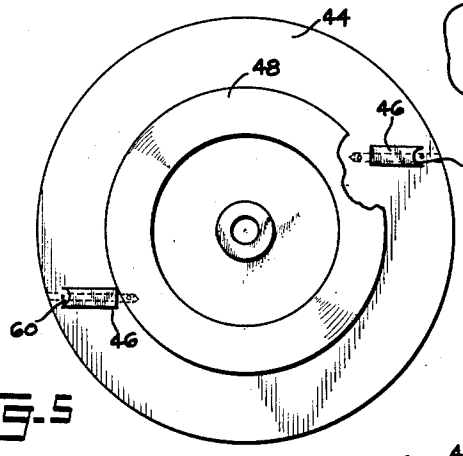

FIG. 5

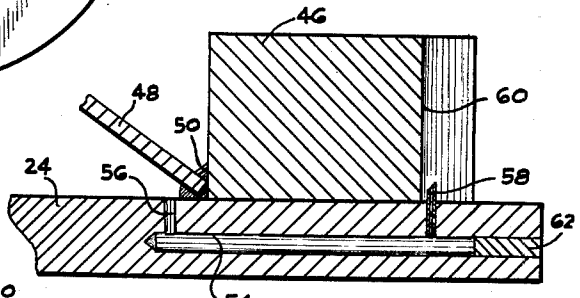

FIG. 7

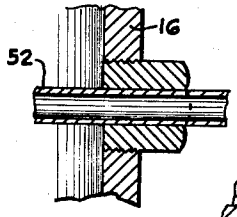

FIG. 8

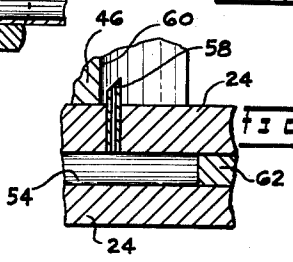

FIG. 10

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MECHANICAL CARBURETOR

George L. Olson, Toms River, N.J.

Application September 15, 1958, Serial No. 761,170

2 Claims. (Cl. 261—89)

This invention relates to internal combustion engines and, more particularly, to a carburetor therefor.

Various attempts have been made to increase the efficiency of the fuel consumed by internal combustion engines. In some instances, it has been proposed to use a device for breaking up the fuel particles into extremely small size so as to more uniformly mix the air and fuel before it is supplied to the engine. However, such have lacked the desired degree of success in many ways. Accordingly, it is an object of the present invention to provide a mechanical carburetor for internal combustion engines that is extremely simple in construction, efficient in operation, and which will provide increased power per unit of fuel.

Another object of the present invention is to provide a mechanical carburetor embodying a centrifugal fuel distributor that throws the fuel radially outwardly with such force as to divide the fuel into minute particles.

Still a further object of the present invention is to provide a mechanical carburetor of the type described that has a minimum number of moving parts, is readily serviced and maintained, and which can be installed in new and old models of internal combustion engines at a relatively low cost.

All of the foregoing and still further objects and advantages of this invention will become apparent from a study of the following specification, taken in connection with the accompanying drawing, wherein:

Figure 1 is a side elevational view of a mechanical carburetor made in accordance with the present invention in operative use;

Figure 2 is an enlarged top plan view of the structure shown in Figure 1;

Figure 3 is a fragmentary side elevational view of certain parts of the apparatus shown in Figure 1 in an adjusted position;

Figure 4 is a fragmentary longitudinal cross sectional view of certain parts of the structure shown in Figure 1;

Figure 5 is an enlarged top plan view of a disc member forming a part of the present invention;

Figure 6 is an enlarged fragmentary plan view, with parts broken away, of certain parts of the structure shown in Figure 5;

Figure 7 is an enlarged longitudinal cross sectional view of still further parts of the device shown in Figure 5;

Figure 8 is an enlarged fragmentary cross sectional view of still other parts of the present invention;

Figure 9 is a fragmentary cross sectional view of still other parts of the present invention; and

Figure 10 is an enlarged fragmentary cross sectional view of certain parts of the structure shown in Figure 7.

Referring now to the drawing, and more particularly to Figures 1 to 4 thereof, a mechanical carburetor **15** made in accordance with the present invention is shown to include an upwardly opening base member **16** having a mounting flange **18** at the lower end for connection to a similar mounting flange **20** carried by the intake manifold **22** of an internal combustion engine, such as by securement bolts **24**. The housing also includes a top closure member **26** having a mounting flange **28** connected to the mounting flange **30** at the top of the base member **16**, such as by bolts **32**. The top wall **34** supports a plurality of depending angle brackets **38**, by means of bolts **36**, which mounting brackets are integrally secured to the casing of an electric motor **40** which extends into the interior of the housing. This motor **40** has a drive shaft **42** centrally secured to a disc assembly **44** which is mounted for rotation in a horizontal plane within the upper section of the base member **16**.

As is more clearly shown in Figures 5 to 10, the disc **44** supports a pair of diametrically opposite upwardly extending vanes **46** and a concentric hollow segmental conical shell **48** that is secured thereto, such as by a continuous weld **50**. A fuel supply line **52** extending through the outer wall of the base member **16** empties into the interior of the conical shell **48** which serves as a reservoir for supplying a continuous flow of fuel into an outwardly extending bore **54** through an inlet **56**. The outer end of this bore **54** is closed by an end plug **62**, but empties into an outlet duct **58** that extends into association with the outwardly concave surface **60** at the outermost extremity of each vane **46**. It will thus be recognized that in response to energization of the motor **40**, the disc **44** will be rotated at a high speed so as to discharge fuel from within the shell **48** outwardly through the discharge duct **58** so as to be thrown at high speeds centrifugally radially outwardly from the disc so as to enable the fuel to be broken into small particles for mixture with the air within the housing.

As is more clearly shown in Figures 1 to 3 of the drawing, a constant level float controlled reservoir **64** filled with fuel **66** is adjustably supported upon the housing by means of a pair of spaced apart parallel arms **70** pivotally secured at opposite ends, by means of pivot pins **72**, **74** to brackets secured to both the reservoir **74** and base member **16**. A length of flexible tubing **68** connects the outlet **69** of the reservoir **64** to the fuel supply line **52**. Since this reservoir is gravity operated, the quantity of flow can be adjusted by adjusting the height of the reservoir relative to the disc **44**. Thus, in the position shown in Figure 3, a greater fuel flow will be supplied to the disc **44** than in the position shown in Figure 1.

The top plate **34** of the closure member **26** is also provided with a plurality of circumferentially spaced apart air inlet openings **76** that may be adjusted by the position of the outer ends of a cross arm plate **78** that may be adjusted by a handle **82**. In the maximum open position illustrated in Figure 2 of the drawing, a maximum quantity of air will be supplied to the interior of the housing, while the handle **82** can be rotated to restrict the amount of air entering into contact with the fuel being centrifugally discharged by the disc **44**. This cross arm plate **78** is pivotally supported upon the top wall **34** of the closure **26** by means of a centrally located pivot bolt **80**.

While this invention has been described with particular reference to the construction shown in the drawing, it is to be understood that such is not to be construed as imparting limitations upon the invention, which is best defined by the claims appended hereto.

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

1. A mechanical carburetor comprising, in combination, a rigid housing, a centrifugal fuel distributor supported within said housing, gravity fuel feed means carried by said housing and communicating with said distributor, air inlet control means communicating with the interior of said housing, said housing comprising an

upwardly opening base member having a downwardly opening throat for connection to an intake manifold, a top closure member connected to the top of said base, said centrifugal fuel distributor comprising a motor supported within said top closure member having a drive shaft extending into said base member, a disc secured to said drive shaft of said motor, ducts extending outwardly through said disc secured to said drive shaft, said fuel feed means supplying fuel to the inner end of said outwardly extending ducts, and vanes carried by said disc adjacent to the outer end of said ducts for directing fuel radially outwardly therefrom in response to energization of said motor, said fuel feed means comprising a supply line extending through said base member in overlying relationship with said disc, a hollow segmental conical shell secured to the top of said disc defining a reservoir in communication with said inner end of said ducts and said supply line empting into the interior of said shell,

said fuel feed means comprising a constant level reservoir supported upon said housing above the level of said disc, and a flexible tube connected between said supply line and said constant level reservoir.

2. A mechanical carburetor as set forth in claim 1, further comprising a pair of vertically spaced apart parallel arms pivotally connected at opposite ends to said reservoir and said housing adjustably supporting said reservoir upon said housing.

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