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W. O. GEPFERT ET AL

MIXING DEVICE

Filed Nov. 6, 1922

Fig. 1.

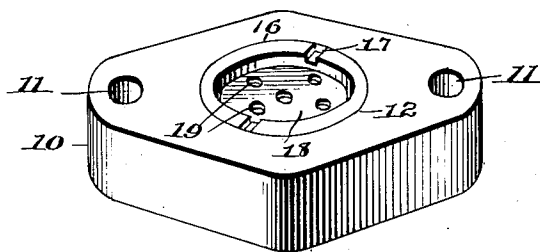


Fig. 2.

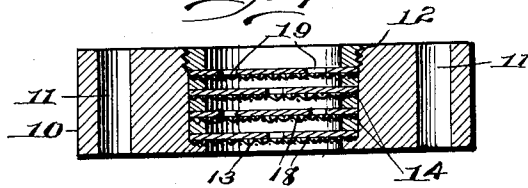
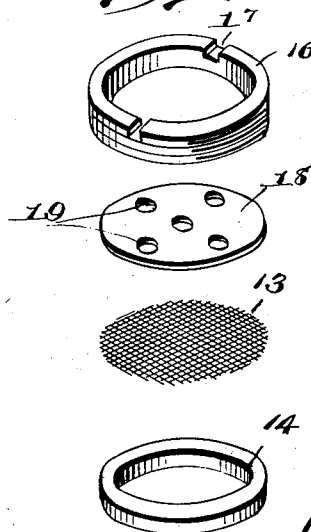


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM OWEN GEFFERT, OF ARCH CREEK, AND CHARLIE STROMQUIST, OF MIAMI, FLORIDA; SAID STROMQUIST ASSIGNOR TO SAID GEFFERT.

MIXING DEVICE.

Application filed November 6, 1922. Serial No. 599,368.

To all whom it may concern:

Be it known that we, WILLIAM OWEN GEFFERT and CHARLIE STROMQUIST, citizens of the United States, residing at, respectively, Arch Creek P. O., and Miami, in the county of Dade and State of Florida, have invented new and useful Improvements in a Mixing Device, of which the following is a specification.

This invention relates to a fuel mixing and vaporizing device for internal combustion engines, and particularly to means attachable between the carburetor and the intake manifold for breaking the gaseous charge into minute particles to secure complete vaporization and perfect combustion.

The essential object of the invention is to provide for increased motor power and speed with a minimum consumption of fuel and an appreciable reduction in the formation of carbon deposits in the engine cylinder, this object being attained by directing the fuel charge through a series of superimposed atomizers or screws by which the heavy gas is broken up into minute particles and more thoroughly aerated, thus insuring perfect combustion with the explosion chamber.

A further object of the invention is to provide a fuel vaporizer and mixing device of the above described character which also embodies a governor for regulating the volume of the charge passing through the device so as to increase or decrease the same with a corresponding increase or decrease in the speed of the motor.

An additional object of the invention is to provide a fuel vaporizing and mixing attachment which is not only capable of being readily and conveniently installed on the carburetor intake but which is also of such construction and design as to be conveniently separated into its component parts for purposes of repairs, replacement or otherwise.

The above and other objects are attained by the particular construction and arrangement of parts hereinafter described and explained in detail, reference being had to the accompanying drawings, wherein:

Figure 1 is a foreshortened view of the device,

Figure 2 is vertical central section taken longitudinally of the device, and

Figure 3 is a composite view illustrating various units of the device.

The device embodies a body portion 10 of suitable metal and preferably of the shape illustrated in the drawing so as to conform in outline to the attaching flanges of the carburetor and the intake manifold between which it is installed, bolt openings 11 being provided at opposite ends of the body to accommodate the usual fastening bolts employed to connect the carburetor to the intake manifold. As represented, the body is comparatively of thick cross section so that the central opening or gas passage 12 thereof has appreciable depth.

Arranged within the gas passage 12 of the body, in superimposed relation, are a plurality of atomizing screens 13 and spacing rings 14, the latter alternating with the screens as illustrated. These screens may be of similar and corresponding mesh, or they may be of relatively different mesh. Hence, screens of the same or varying degrees of fineness may be employed and arranged according to the character or grade of fuel used, heavy and mixed fuels usually requiring screens of a finer mesh than the light and volatile oils.

In its passage from the carburetor to the intake manifold the gaseous charges impinge screens 13 and are thereby broken up into fine particles which are more easily vaporized and aerated, resulting in complete carburetion and perfect combustion in the combustion chamber of the engine. Consequently, the engine is enabled to develop more power and speed with a minimum consumption of fuel and the formation of carbon deposits by the entrance of raw gasoline into the cylinders is prevented.

The gas passage 12 of the attachment is slightly restricted at its upper end by an overhanging flange 15, forming a shoulder or seat on the inside of the passage for the uppermost screen 12, and the lower inside portion of the passage is threaded to receive the screw plug 16 which holds the screens 12 and rings 13 in place. Plug 16 has notches 17 provided in its outer face whereby it may be gripped and turned by a wrench or other tool.

Governor means 18 is provided for regulating the volume of the gaseous charge passing

ing through the screens so as to control the speed of the engine. As shown, this may comprise a thin perforated disk or shutter of such diameter as to fit snugly in the gas passage 12 of the body 10, at the bottom end of the superimposed screens, the perforations 19 being of small diameters as illustrated. Disks 18 may be provided in such quantities and such sizes as may be desirable, differing from each other in respect to the number and extent of the perforations so as to be interchangeable for increasing or decreasing the volume as required. Hence, by changing the shutter, the speed of the engine may be accelerated or retarded in proportion of the feed of the fuel through the attachment.

From the foregoing, it is believed that the advantages and novel features of the invention will be readily apparent and it is to be further understood that the right is herein reserved to make such alterations and modifications in the relative arrangement, construction and design of the various parts as comes properly within the scope of the invention, as hereinafter claimed.

Having thus described our invention, and without enumerating variations and equivalents, what we desire protected by Letters Patent is as set forth in the following claims:

1. In a device of the character specified

comprising a body having a central recess for containing a plurality of filtering screen units, each unit comprising a disk of wire net-work and a disk of metal formed with a plurality of perforations, washers holding said units in spaced relation, means in connection with one of the units for limiting the volume of gas penetrating the said units, and means for retaining said units in position in said recess in the body.

2. In a device of the character specified comprising a body having a central recess for housing a plurality of filtering screen units, each unit comprising a disk of wire net work and a disk of metal formed with a plurality of perforations, said units being positioned in superimposed relation, the perforations in the disk of the units being in staggered relation, so as to provide a compound and torturous passage for the fuel as it makes its way through the recess, washers holding said units in spaced relation, means associated with one of the units within the recess for regulating the volume of gas passing through the said unit, and means for retaining said units in position in the said recess.

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Witnesses:

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