July 5, 1932. C. M. KUMMERER 1,866,473

GASOLINE VAPORIZER

Filed May 16, 1931

Fig. 1.

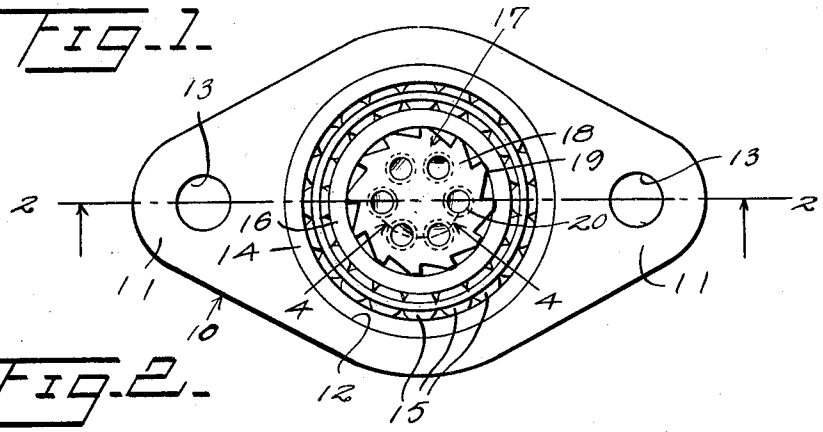


Fig. 2.

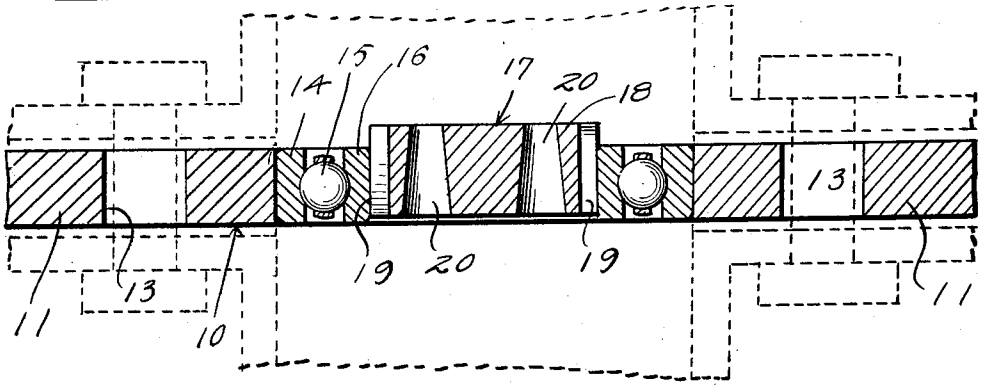


Fig. 3.

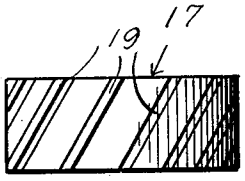
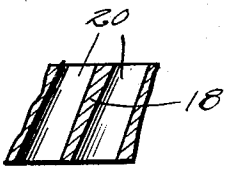


Fig. 4.



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Patented July 5, 1932 1,866,473

UNITED STATES PATENT OFFICE

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GASOLINE VAPORIZER

Application filed May 16, 1931. Serial No. 537,914.

This invention relates to gaseous fuel mixers, and more particularly to a mixer which may be readily mounted on a carbureter without interfering with the present parts of the carbureter.

An object of this invention is to provide a mixer of this kind which operates through suction of the motor, the mixer being interposed between the carbureter and the intake manifold so as to break up all liquid globules passing from the carbureter to the manifold.

Another object of this invention is to provide in a device of this kind anti-friction bearings within which the mixer is disposed so that it will readily revolve and break up any globules passing therethrough.

The above and various other objects and advantages of this invention will in part be described in and in part be understood from the following detailed description of the present preferred embodiment, the same being illustrated in the accompanying drawing, wherein:—

Figure 1 is a detail side elevation of a device constructed according to the preferred embodiment of this invention;

Figure 2 is an enlarged sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a detail side elevation of the vaporizing wheel, and

Figure 4 is a fragmentary sectional view taken on the line 4—4 of Figure 1.

Referring to the drawing wherein like numerals of reference designate corresponding parts throughout the several views, the numeral 10 designates generally a base plate having ears 11 provided with apertures 13 for receiving bolts so as to mount the base 10 between the carbureter and the intake manifold. This base 10 is provided with an enlarged aperture or bore 12 therethrough for receiving the outer ring 14 of a ball race. A plurality of ball bearing members 15 are disposed within the outer race member 14 and disposed between this outer race member 14 and an inner race member 16.

Disposed within the inner race member or ring 16, there is mounted a mixing member, generally designated as 17, which member 17 comprises a disk-like body 18 provided with peripheral wings 19 which are mounted in spiral form on the periphery of the body 18. The outer edges of the wings or fins 19 engage within the inner circle of the annulus 16. This body plate 18 is also provided with a plurality of tapering passages 20 therethrough, which are disposed in inclined relation to the longitudinal axis of the plate 18 and are preferably disposed at substantially the same inclination as the fins or blades 19. These tapering apertures 20 preferably have the large portion thereof disposed on the intake side, the apex of the apertures constituting nozzles for breaking up the liquid gasoline.

In the operation of this device, the plate 10 is preferably interposed between the intake manifold and the carbureter and as the suction of the engine draws gasoline and air through the carbureter, the suction will cause the mixing member 17, together with the annulus 16, to rotate at a relatively rapid rate, this being accomplished by reason of the inclined apertures 20 and the inclined fins or blades 19. When the gasoline strikes the revolving mixing member 17, any globules of gasoline will be broken up by contact with the mixing member 17 which will mix the gasoline with any air passing therethrough. If desired, the opposite sides of the mixing member 17 may be disposed flush with the opposite sides of the base plate 10 or, as disclosed in the drawing, a portion of the mixing member 17 may project outwardly of one side of the base plate so as to produce a fan-like effect on the vapor passing therethrough.

It is, of course, understood that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

I claim:—

1. A mixer of the character described comprising a base plate adapted to be interposed between an intake manifold and a carbureter, a mixing wheel, and a ball race interposed between the wheel and the plate whereby to

rotatably mount said wheel within the plate, said wheel having a plurality of inclined tapering apertures therethrough constituting nozzles for breaking up globules of liquid passing through said wheel.

2. A mixer of the character described comprising a base plate adapted to be interposed between an intake manifold and a carbureter, a mixing wheel and a ball race interposed between the wheel and the plate for rotatably mounting the wheel within the plate, said race having an inner annulus engaging the wheel and the balls of the race, said wheel comprising a body portion having inclined tapering apertures therethrough, the large portion of said apertures being disposed toward the carbureter, and a plurality of spirally disposed fins formed on the peripherial portion of said body and engaging said annulus, said fins cooperating with said inclined apertures whereby to break up globules of liquids passing through the wheel.

In testimony whereof I hereunto affix my signature.

CYRIL M. KUMMERER.