

F. W. SIMONS.
GASEOUS FUEL MIXER.
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1,139,912.

Patented May 18, 1915.

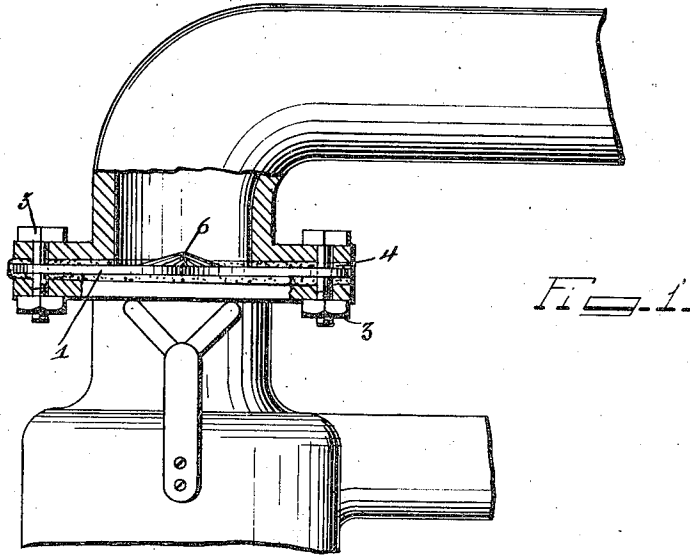


Fig. 2.

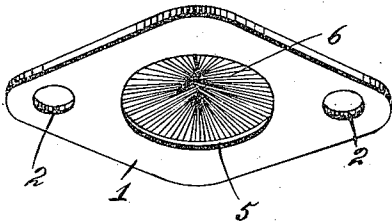


Fig. 3.

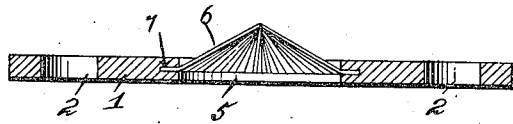


Fig. 4.

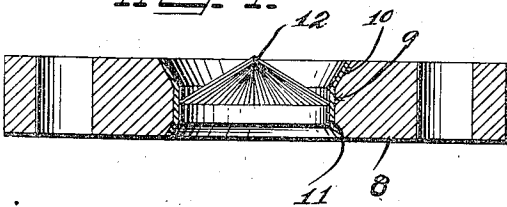
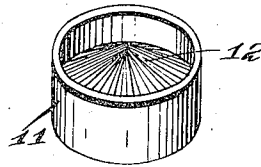


Fig. 5.



Witnesses

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34

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GASEOUS-FUEL MIXER.

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To all whom it may concern:

Be it known that I, FRANK W. SIMONS, a citizen of the United States, residing at Vallejo, in the county of Solano and State of California, have invented certain new and useful Improvements in Gaseous-Fuel Mixers, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to gaseous fuel mixers especially adapted to be used in manifolds of explosive engines and the like, and has for its principal object the production of a simple and efficient means for preventing the back fire of the engine into the carbureter.

Another object of the invention is the production of an efficient mixer which will cause the fuel passing therethrough to be thoroughly vaporized and at the same time prevent the accumulation of foreign substances upon the mixer.

With these and other objects in view this invention consists of certain novel combinations, constructions and arrangements of parts as will be hereinafter fully described and claimed.

In the drawing: Figure 1 is a side elevation of a portion of the feed pipe from the carbureter to the cylinder of the engine showing the fuel mixer in section. Fig. 2 is a detailed perspective of the fuel mixer. Fig. 3 is a longitudinal section through the mixer. Fig. 4 is a modified form of the mixer used in connection with the present invention. Fig. 5 is a detailed perspective view of the ring used in connection with the mixer illustrated in Fig. 4.

By referring to the drawings it will be seen that 1 designates the body of the gaseous fuel mixer which may be formed of any desired shape, but preferably comprising an elongated body to fit the joint between the conveying pipe from the carbureter to the cylinder of the engine. The body 1 of the mixer is provided with a plurality of apertures 2 at the end thereof for the purpose of allowing the fastening bolts 3 to pass therethrough. The body 1 may also be provided with a cover 4 of asbestos, as illustrated clearly in Fig. 1.

The body of the fuel mixer is provided with a centrally located aperture 5 in which aperture is placed a plurality of small wires 6 having their ends embedded in the periph-

ery of the aperture 5, as illustrated clearly at 7 in Fig. 3. The wires 6 are so positioned in the aperture 5 as to have their free outer ends brought together to constitute a substantially cone-shaped dome, thereby allowing free passage of the gaseous material from the carbureter and at the same time prevent the back fire of the burnt or exploded gases into the carbureter, as the flame from the exploding gases will not be allowed to pass through the wires 6. It should be understood further that the wires 6 by allowing the gaseous material to pass therethrough would be caused to vibrate and in this manner allow any material which has accumulated upon the wires 6 to be thrown or freed therethrough.

It should be borne in mind that the arrangement of the wires 6 as described and illustrated, is a very important one, as it has been found from actual experience that an ordinary woven wire screen such as now in ordinary use, will become clogged up, and hence the same become useless. In the present device, however, the wires 6 by being secured to the periphery of the aperture 5 and by being free at their outer ends will vibrate, as the gaseous material passes through the aperture 5 and in this way repel all foreign substance or accumulation which might otherwise gather upon the screen wire 6. It has also been found that by use of the present device considerable of the noise of the explosion has been eliminated, and further, that the engine will run more smoothly owing to the fact that the greatest amount of power is provided from the gasolene used in connection with the present device. It should be further understood that since the wires 6 are arranged in conical shape, the free ends of the wires extending upwardly and as the gasolene passes through the aperture 5, the wires 6 will cut up the globules or drops into a very fine spray so as to allow the gasolene to produce a better vapor than the carbureter alone for the purpose of using the same in an explosive engine.

By referring to Figs. 4 and 5 of the drawing it will be seen that a slightly modified form of the device is produced wherein the body 8 is provided with a centrally located aperture 9 having beveled inner and outer edges 10, and a ring 11 is placed within the aperture 9 and carries a substantially

dome-shaped wire screen 12 similar to the wires 6 above described. The wires of the wire screen 12 are fixedly secured to the ring 11 and have their free ends extending upwardly and engaging each other to produce a substantial cone-shaped screen. The edge of the ring 11 is then bent to fit snugly upon the beveled edges 10 of the body 8 for the purpose of firmly holding the ring 11 in a set position relative to the body 8. When making the body 1 of lead, or other soft material, it is preferable to cast the wires 6 in the body 1 as illustrated clearly in Fig. 3. On the other hand if the body is made of other metal, fiber, asbestos, heavy paper or the like, it is preferable that the wire screen, such as illustrated at 12 in Fig. 5, be securely held to the body 8 as is illustrated in Fig. 4. Of course, it should be understood that the gaseous material is drawn through the wires 6 by means of the suction caused by the cylinder of the engine, and that in this

way the wires 6, through this suction will be caused to vibrate as above described.

What is claimed, is:

A gaseous fuel mixer consisting of a plate in the conduit through which the fuel mixture is conducted from a carbureter to an engine and having an aperture, and a plurality of converging flexible baffle rods extending across said aperture and having their outer ends rigidly secured in the wall of the aperture and their inner ends free and brought close together at one side of the plane of their outer ends whereby a hollow cone is interposed in the path of the fuel mixture with its apex extended in the direction of the flow.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

FRANK W. SIMONS.

Witnesses:

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