

1,269,753.

Patented June 18, 1918.

Fig. 1.

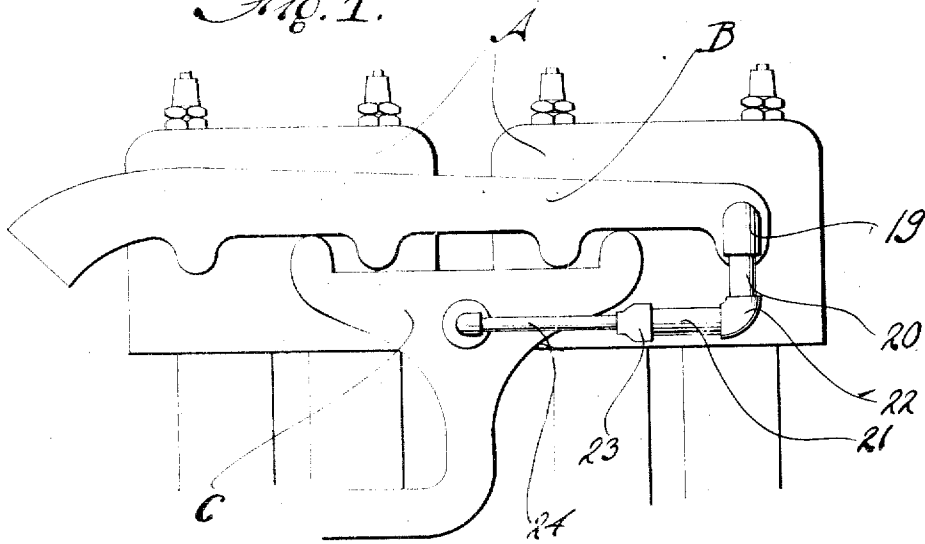
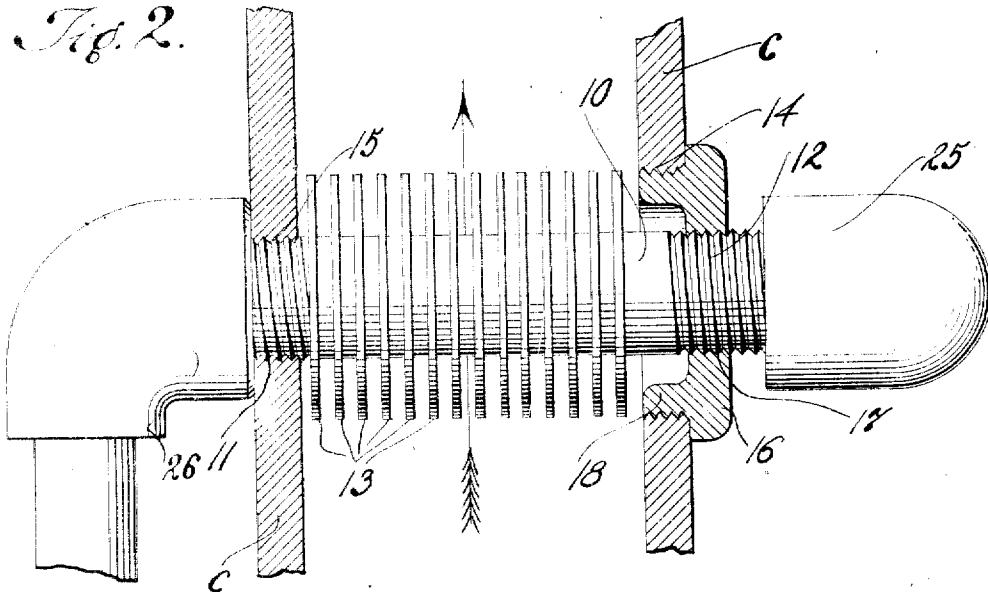


Fig. 2.



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WITNESSES

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FUEL-VAPORIZER.

1,269,753.

Specification of Letters Patent.

Patented June 18, 1918.

Application filed November 26, 1915. Serial No. 63,593.

To all whom it may concern:

Be it known that I, ORIE C. SHUM, a citizen of the United States, residing at Bedford, in the county of Taylor and State of Iowa, have invented certain new and useful Improvements in Fuel-Vaporizers, of which the following is a specification.

My present invention relates to a new and improved fuel vaporizing device to be used in connection with internal combustion engines; and the primary object of the invention is to provide a novel device of this nature that may be positioned in single or manifold intake pipes or conduits for properly gasifying the fuel before it enters the cylinder head or heads so that the charge will ignite more freely and the gases expand with greater force than would otherwise be the case and to thus not only assure a more efficient operation of the engine, or other device in connection with which it is used, but to also minimize the amount of fuel consumed.

A further object of my invention is to provide a new and improved device of the type in question that is extremely simple, strong and durable, and highly practical from both the standpoint of the manufacturer and the standpoint of the user; and which, it is believed may be manufactured at a minimum cost.

Various other objects and advantages will become apparent during the continuance of the following description.

These objects are accomplished by such means as are shown in their preferred form in the accompanying drawings, described in the following specification and then more specifically pointed out in the appended claims.

In the accompanying drawings wherein like characters designate like parts throughout the several views;

Figure 1 is a view in end elevation showing my invention, as in its preferred embodiment, in connection with the portion of an internal combustion engine of the conventional form.

Fig. 2 is a view in side elevation of my invention showing the same as in place in connection with the intake pipe.

In the drawings A designates the body of the engine in connection with which my invention has been illustrated, the same being provided with an exhaust pipe B and intake pipe C, as clearly shown in Fig. 1.

While as is set forth above this engine is of substantially the conventional form, it is to be appreciated that I am not limited to the use of my invention in connection therewith and that the latter may be employed in connection with other devices if it is so desired. My improved gasifier consists essentially of a body portion 10, preferably in the form of a hollow pipe or conduit, which may be screw threaded adjacent its ends as at 11 and 12 in order to be received in suitable apertures therefor such as will be hereinafter set forth. Intermediate its ends, the body 10 is provided with a plurality of spaced apart disks 13 which may be either integral therewith, such as by being cast, or mounted to be removable therefrom.

I further provide one wall of the intake pipe C with a screw threaded opening 14 to permit the insertion of the gasifier therein, and the other wall with a similarly threaded opening 15, of less diameter, to receive the screw threaded portion 11 of the body 10. After the gasifier has been arranged within the intake pipe in the desired position, the closing nut 16 which has a screw threaded opening 17 for receiving the screw threaded portion 12 of the body 10, is screwed upon the body until the exteriorly screw threaded flange 18 thereof seats snugly within the opening 14. Thus it will be understood that the body 10 will be held in an approximately stationary position and incidentally in the path of the fuel flowing through the intake pipe.

The exhaust manifold B of the engine is provided with an outlet pipe 19 to which is connected the nipple 20 that is in turn connected with a second pipe 21 through the medium of an elbow 22. A fitting 23 is carried at the other end of the pipe 21 which in turn connects with a pipe 24 which is secured to the projecting end of the body 10 of the gasifier by an elbow 25. Consequently it will be observed that a portion of the exhaust gases from the engine will be conducted directly to the hollow body of the gasifier so as to properly heat the same and also heat the disks 13 which are carried thereby. The screw threaded end 15 of the body of the gasifier also connects with an elbow 26 which receives the gases from the body of the gasifier in an obvious manner. It is pointed out that this elbow 26, may also be connected with an outlet pipe such as designated at 26' whereby the gases from the

body may be made to pass freely into the atmosphere.

In the operation of my device it will be understood that a portion of the exhaust gases from the engine will be conducted through the pipes 20, 21 and 24 to the body 10 of the gasifier, such as will cause the body as well as the disks 13 to become heated to an appreciable extent. Consequently as the fuel passes over and between the disks it will be completely gasified before reaching the cylinder head. By first properly gasifying the fuel, the charge may be ignited more freely and the gases will expand with a greater force than would otherwise be the case.

From the foregoing it is believed that the advantages and novel features of my invention will be readily understood and therefore further detailed description is deemed unnecessary.

In reducing my invention to practice I and that the form referred to herein is the most efficient, but realizing that certain conditions will necessarily vary in concurrence with the adoption of my device, I desire to emphasize the fact that various minor changes in the details of construction and in the proportion of parts may be resorted to when required without sacrificing any of

the advantages of my invention as defined in the appended claims.

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

The combination with the intake manifold of an internal combustion engine, of a heater secured transversely within the manifold, said heater comprising a hollow cylindrical body and having thereon spaced radiating ribs, said body being provided with screw threads near its outer ends, said manifold being provided with different diametered aligned threaded holes, one of which is adapted to cooperate with one threaded end of the body, the larger of said manifold holes being of such diameter as will permit the heater with its assembled ribs to pass through, said body being adapted for connection with the exhaust manifold so that heated gases may pass through and produce a heating of the ribs and thereby heat the gaseous fuel passing over said ribs.

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

ORIE C. SHUM.

Witnesses:

LEE STRICKLER,
WM. NIELSEN.