Feb. 9, 1937. V. V. WEBSTER 2,070,189

DIESEL GAS DEVICE OR HEATER

Filed July 29, 1936

Fig. 1.

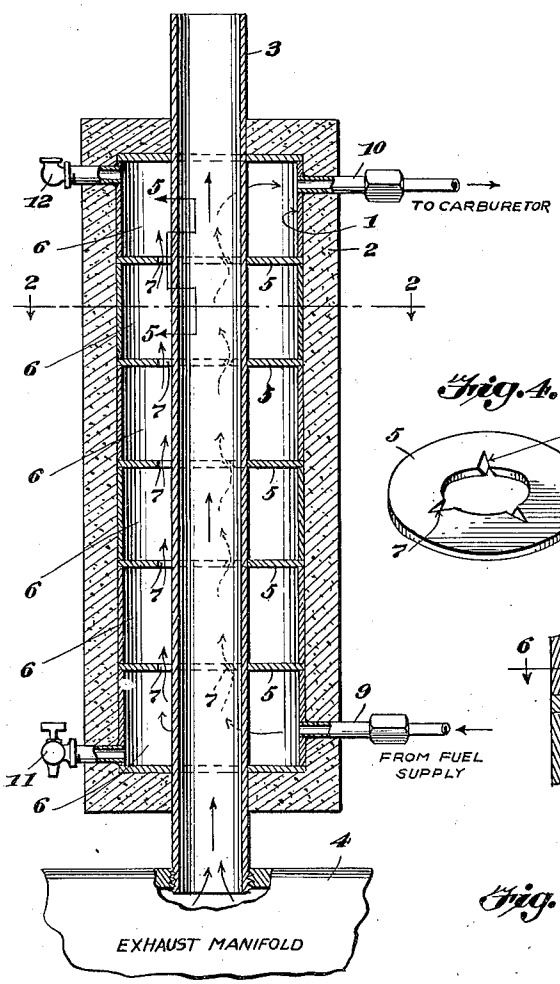


Fig. 3.

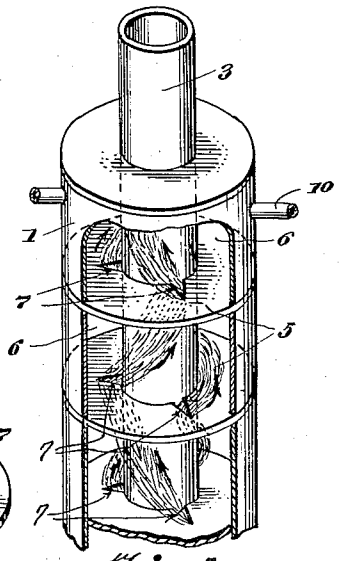


Fig. 4.

Fig. 5.

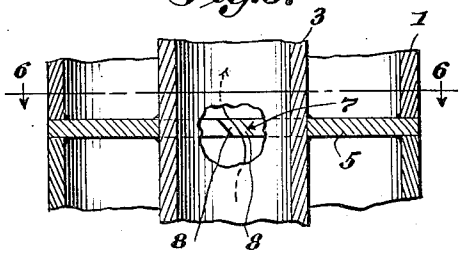


Fig. 2.

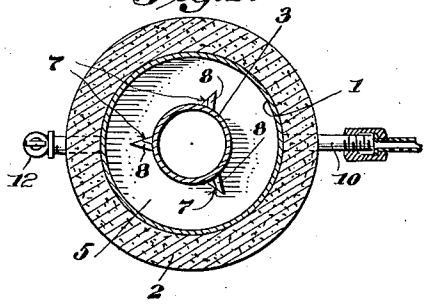
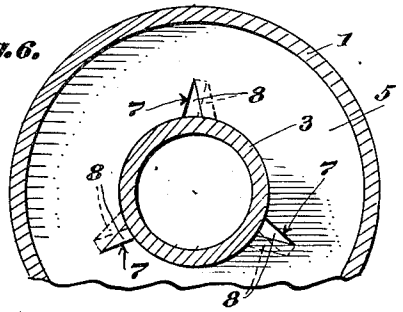


Fig. 6.



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UNITED STATES PATENT OFFICE

2,070,189

DIESEL GAS DEVICE OR HEATER

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Application July 29, 1936, Serial No. 93,303

6 Claims. (Cl. 257—241)

This invention relates to a fuel heater especially constructed to be attached to a gas motor to burn Diesel or cheap fuel.

Another object of the invention is the construction of a simple and efficient heater device for receiving the fuel as it passes from a suitable source of supply, then heating the fuel and allowing it to pass to the carburetor in a highly heated condition giving more power and less fuel consumption.

Another object of the invention is the construction of a heater device which will operate on any gas motor without changing the manifold or carburetor, whereby no dilution of motor oil occurs and no collection of carbon.

A still further object of the invention is the construction of a fuel heater device which is provided with a plurality of partitions, and each partition having a plurality of efficiently constructed slots for causing the fuel to be passed through the device in a highly efficient manner, which results in the fuel being heated satisfactorily prior to the same passing into the carburetor.

With the foregoing and other objects in view, my invention comprises certain novel constructions, combinations and arrangements of parts as will be hereinafter fully described, illustrated in the accompanying drawing, and more particularly pointed out in the appended claims.

In the drawing:

Figure 1 is a vertical central sectional view of the device.

Figure 2 is a horizontal sectional view taken on line 2—2, Figure 1, and looking in the direction of the arrows.

Figure 3 is a fragmentary perspective view, partly shown in section, of the device.

Figure 4 is a perspective view of one of the disc-like partitions.

Figure 5 is an enlarged sectional view taken on line 5—5, Figure 1, and looking in the direction of the arrows.

Figure 6 is a horizontal sectional view taken on line 6—6, Figure 5, and looking in the direction of the arrows.

Referring to the drawing by numerals, 1 designates a suitable casing which is surrounded by an asbestos jacket 2. An exhaust pipe or tube 3 extends entirely through the central portion of casing 1, with preferably its lower end attached to the exhaust manifold 4. This tube 3 may receive only the exhaust from one cylinder of any type of motor. Further, the casing 1 can be made in different sizes, to suit the desired installation.

Any number of disc-like partitions 5 may be suitably assembled with casing 1, but in the present instance I have preferably shown five, whereby the casing 1 is divided into six fuel chambers 6. Each partition 5 is provided with a plurality of V-shape slots 7 at its center, or contiguous to the exhaust tube 3. For efficiently heating the fuel the walls 8 of each slot are inclined to cause the fuel as it passes through each slot to have a whirling action around tube 3 (Fig. 3) as it enters the next succeeding fuel chamber, whereby the fuel is divided into molecules, thereby giving the greatest amount of heating action to the fuel, as it passes through the device, and on to the carburetor. Further, it is to be noted that the slots 7 of one partition are inclined in a reverse position to the slots of the next contiguous partition, whereby the whirling or breaking up of the fuel, in each chamber, (see Fig. 3) as it passes through the device is very efficiently accomplished, for heating the fuel in a most satisfactory manner.

The tubing 9 is suitably attached at one end to casing 1, and its other end is connected to a source of fuel supply (not shown). The tubing 10 is suitably connected to the upper end of casing 1, and its outer end is connected to a carburetor (not shown). A suitable drain 11 is provided at the lower end of casing 1, and a suitable valve 12 is provided at the upper end of casing 1, to allow steam to escape, if any steam should generate within the casing 1.

The asbestos jacket 2 is sufficiently thick to prevent cold air from striking against the casing 1, as well as to keep the casing 1 from cooling; said asbestos jacket 2 also keeps the supply of fuel warm in the casing 1, which makes the motor idle longer.

It is to be understood that the casing 1 may be constructed of sectional units, as shown in Figure 1, with the disc-like partitions 5 interposed between the units, and the units and partitions welded together in any suitable manner to make the whole a solid unitary device as shown; this formation is particularly shown in the enlarged sectional view, Fig. 5.

The marked advantage of my V-shape slots 7 is in the fact that the entire walls of each slot are inclined in substantial parallelism, whereby the breaking up of the fuel, as it passes through the device, is accomplished to the maximum, for greatly facilitating the heating of the fuel. As indicated hereinbefore, the slots 7 of one disc-like partition have their walls inclined in opposite direction to the direction of the incline of the walls of the slots in the contiguous partitions,

both above and below the first-mentioned partition; this peculiar arrangement produces a better result (by breaking the fuel up into molecules) in heating the fuel, as it passes through the device. Further, the inclined walls of each slot meet at their outer ends and diverge outwardly to their inner ends; therefore, the wide end of each slot, at tube **3**, acts as a nozzle, causing the gasoline to be definitely sprayed tangentially (1st) against and (2nd) around tube **3**, for the greatest possible heating of said fuel (Fig. 3).

While I described the preferred embodiment of my invention and illustrated the same in the accompanying drawing, certain minor changes or alterations may appear to one skilled in the art to which this invention relates during the extensive manufacture of the same, and I, therefore, reserve the right to make such changes or alterations as shall fairly fall within the scope of the appended claims.

What I claim is:

1. In a device of the class described, the combination of a casing provided with a plurality of partitions, each partition provided with slots, the slots of one partition having their walls slanted in a reverse direction to the slant of the walls of the slots in the contiguous partitions, and an exhaust tube extending through said casing and said partitions and partly closing said slots.

2. In a device of the class described, the combination of a casing provided with a plurality of partitions one above the other, each partition provided with a plurality of slots, the walls of the slots in one partition being inclined in an opposite direction to the inclination of the walls of the slots in the contiguous partition, and an exhaust tube extending through said casing and through said partitions contiguous to their slots.

3. In a device of the class described, the combination of a casing provided with a series of horizontal partitions, a vertical exhaust pipe extending through the partitions and said casing, said partitions provided only at the outer wall of said exhaust pipe with small slots, and each slot diverging from its outer end to its inner end and opening directly against said exhaust pipe, whereby fuel passing through the casing will be whirled and efficiently heated in the fuel chambers formed by said partitions.

4. In a device of the class described, the combination of a casing provided with a series of horizontal partitions, said partitions producing compartments in said casing, a vertical exhaust tube extending entirely through said casing and through said partitions, each partition provided only at the exhaust tube with V-shape slots, and each slot provided with inclined walls, whereby fluid passing through said slots is caused to spread against the exhaust tube and whirl in each compartment.

5. In a device of the class described, the combination of a casing provided with a series of horizontal partitions arranged in tiered position, each partition provided with slots, each slot having substantially parallel inclined walls, said inclined walls of each slot meeting at their outer ends and diverging outwardly to their inner ends, the slots of one partition having their walls inclined in opposite direction to the direction of incline of the slots in the contiguous partitions both above and below the first-mentioned partition, and an exhaust tube extending through said partitions and casing.

6. In a device of the class described, the combination of a casing provided with a partition, an exhaust tube extending through the center of said casing and partition, said partition provided with small slots only at the exhaust tube, and each slot converging at its outer end and diverging at its inner end against said exhaust tube, whereby the wide inner end of each small slot acts as a nozzle to efficiently spray liquid tangentially against the outer surface of said exhaust tube.

VEY V. WEBSTER.