

W. SHEARER.
CARBURETER.
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948,744.

Patented Feb. 8, 1910.

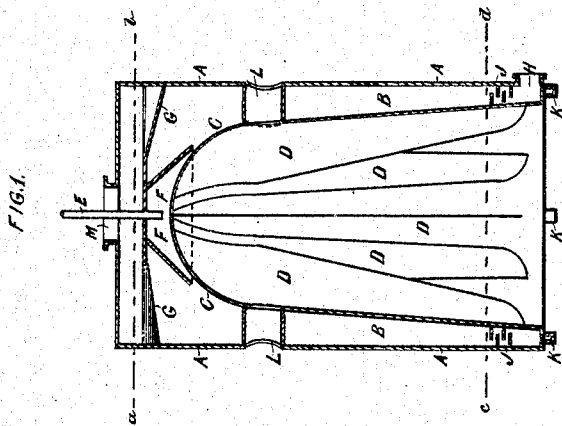
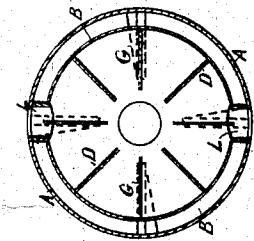
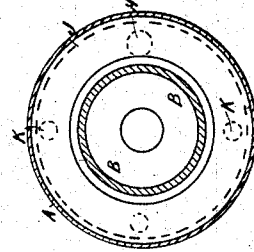
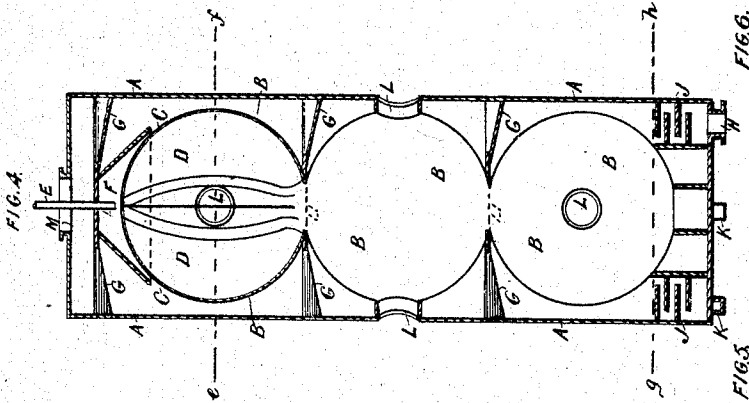


FIG. 3.

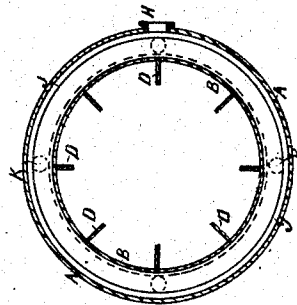
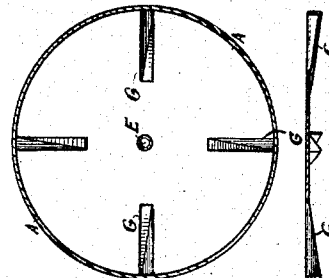


FIG. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

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CARBURETER.

948,744.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM SHEARER, a subject of the King of Great Britain and Ireland, residing at "Ferniecot," 3 Abbey road, Eskbank, in the county of Mid-Lothian, Scotland, have invented new and useful Improvements in Carbureters, of which the following is a specification.

My said invention has for its object to improve the construction and action of carbureters employed in plants making hydrocarbon, petroled, or air gas in which air is mixed with a hydrocarbon such as gasoline, petrol, and the like, and then utilized as a gas for illuminating, heating, and like purposes.

In carrying out my invention the vaporizing surface of the carbureter is arranged so that the hydrocarbon will spread quickly and evenly over a large area, thus completely evaporating the hydrocarbon, and at the same time distributing the reduction in temperature (due to evaporation) over a large surface. To the reverse or underside of the evaporating surface a number of vanes are fixed, those vanes extend down and are immersed in the water or other medium usually employed to retain the carbureter at a suitable temperature, and by means of those vanes a uniform, or nearly uniform, temperature of the evaporating surface is obtained.

Means are provided to protect the incoming hydrocarbon, from the air, until such time as it spreads in a thin film over a portion of the evaporating surface. Means are also provided to distribute the air to the evaporating surface and at the same time to give it a swirling motion so as to insure a thorough mixing of the gas or vapor.

In order that my said invention and the manner of performing the same may be properly understood I hereunto append a sheet of explanatory drawings to be hereinafter referred to in describing my invention.

Figure 1, is a sectional elevation of one example of my invention, and Figs. 2 and 3, are horizontal sections on the lines *a-b*, and *c-d*, respectively, of Fig. 1. Fig. 4, is a sectional elevation of another example, while Figs. 5 and 6, are horizontal sections taken on the lines *e-f*, and *g-h*, respectively, of Fig. 4.

In these drawings the same reference letters are used to mark the same or like parts wherever they are repeated.

As shown in Fig. 1 of the drawings the carbureter consists of the usual cylinder or casing, A, within which is arranged a second casing B, the upper external surface, C, of which is made spherical, oval or dome shaped, so as to present as great an evaporating surface for the hydrocarbon as is practically possible. The casing B, has arranged within it a series of vanes D, the object of which is to maintain or equalize the temperature of the evaporating surface, C. The hydrocarbon enters the cylinder or casing A, by the pipe, E, to the evaporating surface, C, and a cap or disk F, protects the hydrocarbon from the action of the air until such time as the former has spread in a thin film over a considerable portion of the evaporating surface. The air enters by the port, M, and passes through a number of passages, G. These passages may be arranged so as to pass the air in one or more directions. As shown in the drawings these passages are of substantially rectangular form and have wings projecting downwardly therefrom at an inclination, said wings tapering from the inner ends of the passages to the outer ends. The gas or vapor before reaching the outlet or discharge pipe, H, is intercepted by a number of baffle plates J, so that it is thoroughly mixed before passing from the carbureter. The cylinder or casing A, of the carbureter is supported on feet, K, to allow of adequate circulation of the water or other anti-freezing mixture.

As shown in Fig. 4, three casings, B, in the form of spheres, or balls, are employed. These casings, B, are provided with passages, L, so that when the carbureter is placed in a tank or vessel containing the anti-freezing mixture free circulation takes place.

The pipes L (Figs. 1 and 4) communicate direct with the interior of the inner casing. When the carbureter is placed in a tank containing water, the vaporization of the petrol lowers the temperature of the vaporizing surface C, transmits the cold to the vanes D, and as these vanes are immersed in the water, the temperature of the water falls also, the difference in level of the water in the inner casing and the tank being leveled up by water flowing through the pipes L from the tank to the inner casing.

In operation the action of my improved carbureter is as follows:—The hydrocarbon enters by the pipe, E, and spreads in a thin

film over the evaporating surface C, being protected from the air until it spreads and passes beyond the cap or disk, F, hereinbefore referred to. The hydrocarbon now
5 mixes with the air which enters by the port, M, and passages G, and is rapidly vaporized. On reaching the baffle plates J, the gas or vapor is subjected to a final mixing, afterward passing to the discharge pipe, H.

10 What I claim as my invention is:

1. A carbureter comprising an outer casing, an inner casing mounted therein and provided with a dome-shaped upper end, means for introducing air to the space be-
15 tween the two casings, and for taking the carbureted air therefrom, means for delivering hydro-carbon to the upper surface of the dome-shaped upper end, and means for circulating a heating medium through the in-
20 ner casing.

2. A carbureter comprising an outer casing, an inner casing mounted therein and provided with a dome-shaped upper end, means for introducing air to the space be-

tween the two casings, and for taking the
25 carbureted air therefrom, means for delivering hydro-carbon to the dome-shaped upper end, and passages leading from the outer to the inner casing, said inner casing having an opening in its bottom. 30

3. A carbureter comprising an outer casing, an inner casing mounted therein provided with a dome-shaped upper end, means for introducing air to the space between the casings and for taking the carbureted air
35 therefrom, vanes secured to the inside of the inner casing, means for delivering hydro-carbon to the dome-shaped upper end, and means for circulating a heating medium through the inner casing. 40

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM SHEARER.

Witnesses:

GEORGE PATTERSON,
GEORGE PATERSON.