

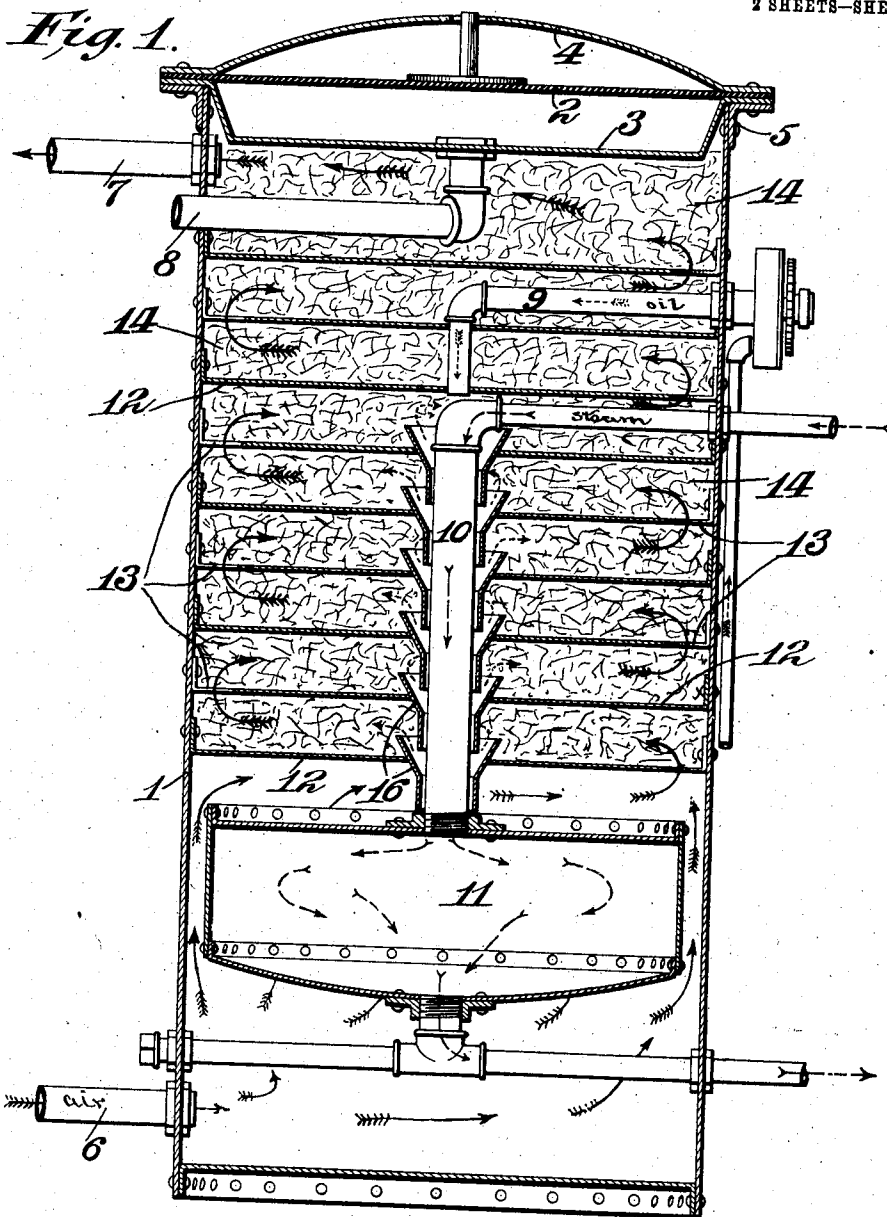
No. 834,697.

PATENTED OCT. 30, 1906.

C. O. WILLIAMS.
CARBURETER.

APPLICATION FILED APR. 19, 1906.

2 SHEETS—SHEET 1.



Witnesses:

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Wm. M. Gady

Inventor:

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By C. O. Williams,
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No. 834,697.

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2 SHEETS—SHEET 2.

Fig. 2.

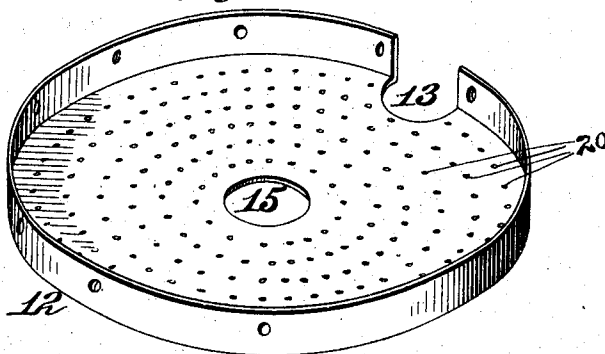


Fig. 3.

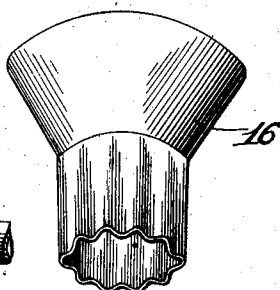
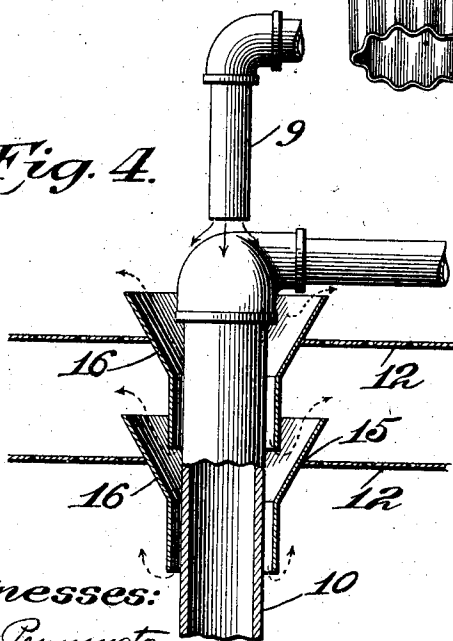


Fig. 4.



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UNITED STATES PATENT OFFICE.

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OF THE DISTRICT OF COLUMBIA.

CARBURETER.

No. 834,697.

Specification of Letters Patent.

Patented Oct. 30, 1906.

Application filed April 19, 1906. Serial No. 312,527.

To all whom it may concern:

Be it known that I, CHARLES O. WILLIAMS, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Carbureters, of which the following is a specification.

My invention relates to gas-machines, and especially to carbureters; and it has for its principal objects to accelerate the vaporization of oil, to accelerate the carbureting action, and to attain other objects hereinafter more fully appearing.

My invention consists in the parts and in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawings, which form part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure 1 is a vertical sectional view of the carbureter. Fig. 2 is a perspective view of one of the partition-plates of the carbureter-chamber. Fig. 3 is a perspective view of one of the oil-funnels. Fig. 4 is a detail view showing the arrangement of the funnel and of the oil-feed pipe and steam-pipe.

The body of the carbureter is a cylindrical tank 1. Across the upper end of this tank extends a flexible diaphragm 2, which is protected from the contents of the tank by means of a disk-shaped shielding plate or partition 3. The end of the tank is closed by a dome-shaped head 4, whose margin is bolted to an angle-iron 5, fixed in the upper end of the tank, with the margin of the diaphragm and of the shielding-partition clamped between the head and the angle-iron.

The tank is provided with an air-inlet pipe 6 at its lower portion, an outlet-pipe 7 at its upper portion, and a pressure-equalizing pipe 8, communicating with the space between the diaphragm and its shielding-partition. The tank is also provided in its upper portion with an oil-pipe 9, which terminates directly above a vertically-arranged portion of a heating-pipe 10, whereby the oil delivered from the oil-pipe will trickle down the outside of the heating-pipe and be vaporized by the heat thereof.

Any suitable heating system may be used; but it is preferable to have the heating-pipe 10 connected to the exhaust-steam pipe of the engine and to have connected thereto an

enlarged drum 11, which may be conveniently located in the lower portion of the tank 1. This drum 11 is of slightly smaller diameter than the diameter of the tank and is mounted concentric with the tank, whereby an annular space intervenes between them. The side of the heating-drum 11 is extended above the top thereof and with the top of the heating-drum forms a receptacle for catching any oil that may drip onto it.

The portion of the tank above the heating-drum has a series of horizontal plates or partitions 12 mounted therein. Each of these plates has an upturned flange and a marginal hole 13. Each plate is mounted so that its marginal hole is at a considerable annular distance from the marginal hole of the next adjacent plates above it and below it. Preferably such marginal holes are arranged diametrically opposite each other. By this arrangement a continuous tortuous passage is formed from the air-space surrounding the heating-drum to the delivery-pipe near the top of the tank. The spaces between adjacent plates are filled with excelsior or other loosely-packed filler 14, which will permit the passage of air therethrough. Each plate has a large number of smaller holes 20 formed therein, which tend to effect a greater distribution of the air-currents. All of the partition-plates below the point of admission of the heating-pipe have central holes 15 therein, and through these aligned holes extends the heating-pipe. Resting upon the edge of each of these central holes and surrounding the heating-pipe is a funnel 16, arranged to catch any oil that may spatter from the heating-pipe or otherwise be delivered into it.

The operation of the device is as follows: The heating-drum and the heating-pipe are heated from any suitable source—as, for instance, by the exhaust-steam of the pump-engine. The oil is delivered in measured quantities through the oil-pipe 9 directly onto the heating-pipe, and air from any suitable source of pressure, such as an air-pump, is forced through the inlet-pipe 6, through the tank, and into the outlet-pipe 7. The oil delivered onto the heating-pipe is rapidly vaporized as it trickles down on the outside of said pipe. Any excess of oil that may not be vaporized is caught in the receptacle at the top of the heating-drum, where it re-

mains until it is vaporized. The vapor generated around the heating-pipe escapes through the flaring funnels into the spaces corresponding to the respective funnels, and the filler in said spaces becomes charged therewith. During this continuous vaporization of the oil the air is continuously circulating through the annular space surrounding the heating-drum and through the long tortuous passage formed by the connecting-spaces between the partition-plates, and during this circulation it becomes intimately mixed and charged with the vapor and passes out into the outlet-pipe 7 as an inflammable gas.

Obviously my device admits of considerable modification within the scope of my invention, and therefore I do not wish to be limited to the specific construction shown and described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A carbureter comprising a tank, a series of transversely-arranged plates having holes therein, a heating-pipe extending through said holes, oil-funnels surrounding said heating-pipe, and an oil-feed arranged to deliver oil onto said heating-pipe, said tank having an air-inlet in its lower portion and an outlet in its upper portion, said plates having marginal holes arranged to constitute a tortuous passage through said tank.

2. A carbureter comprising a tank having inlet and outlet pipes, a series of transversely-

arranged plates therein each having a marginal hole arranged at a considerable distance from the holes of the adjacent plates, some of said plates also having alined holes therein, oil-funnels mounted in said last-mentioned holes, a heating-pipe inside of said oil-funnels, a heating-drum in the bottom portion of said tank and communicating with said heating-pipe, and an oil-feed pipe arranged to deliver oil in the topmost funnel.

3. A carbureter comprising a tank having inlet and outlet pipes, a series of transversely-arranged plates therein each having a marginal hole arranged at a considerable distance from the holes of the adjacent plates, some of said plates also having alined holes therein, oil-funnels mounted in said last-mentioned holes, a heating-pipe inside of said oil-funnels, a heating-drum in the bottom portion of said tank and communicating with said heating-pipe, and an oil-feed pipe arranged to deliver oil in the topmost funnel, said plates having smaller holes therein and the spaces between said plates being filled with loose material.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 28th day of March, 1906, at St. Louis, Missouri.

CHARLES O. WILLIAMS.

Witnesses:

WM. M. CADY,
J. B. MEGOWN.