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W. & J. BROWN.

CARBURETER.

APPLICATION FILED OCT. 20, 1905.

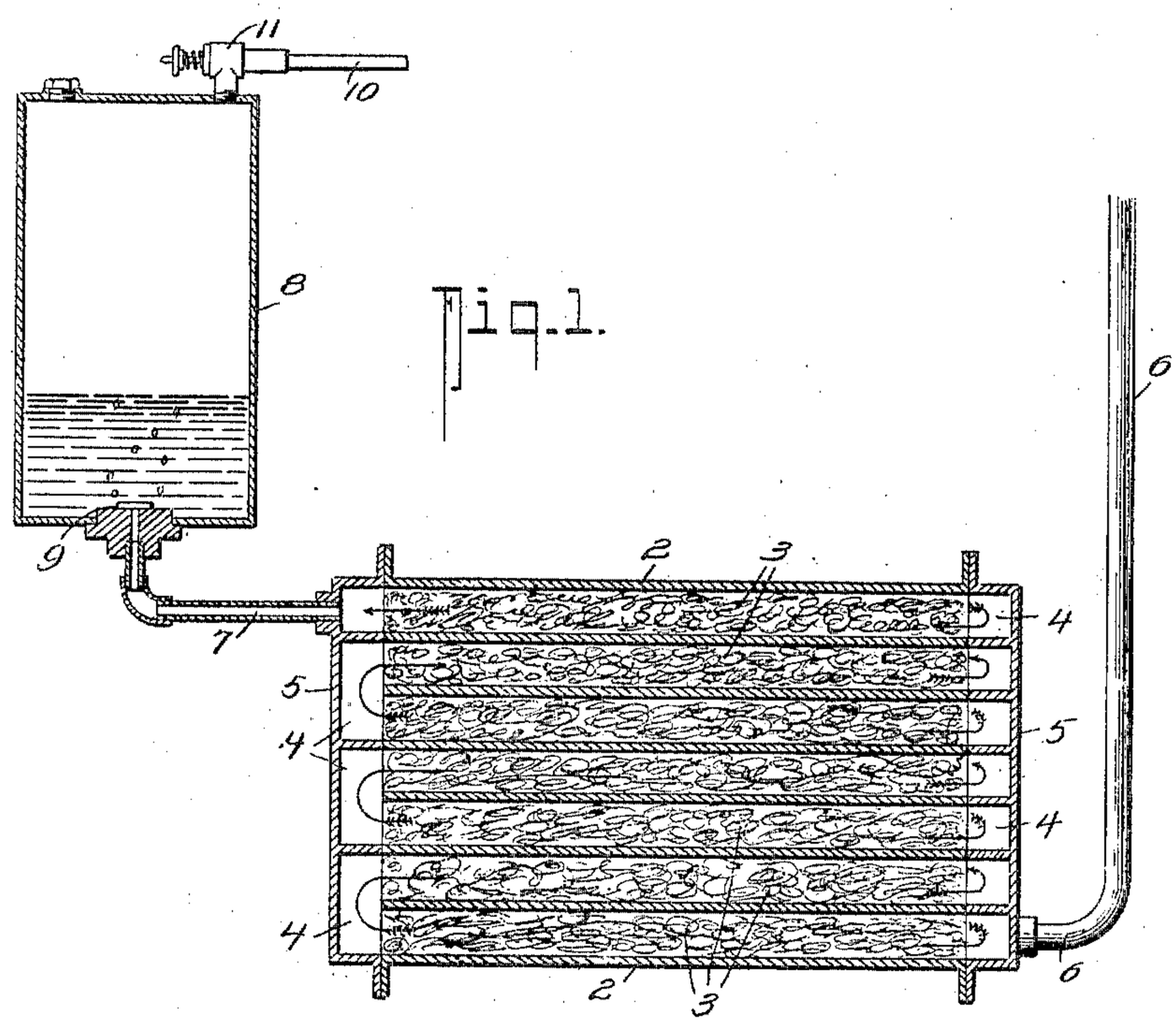


Fig. 1.

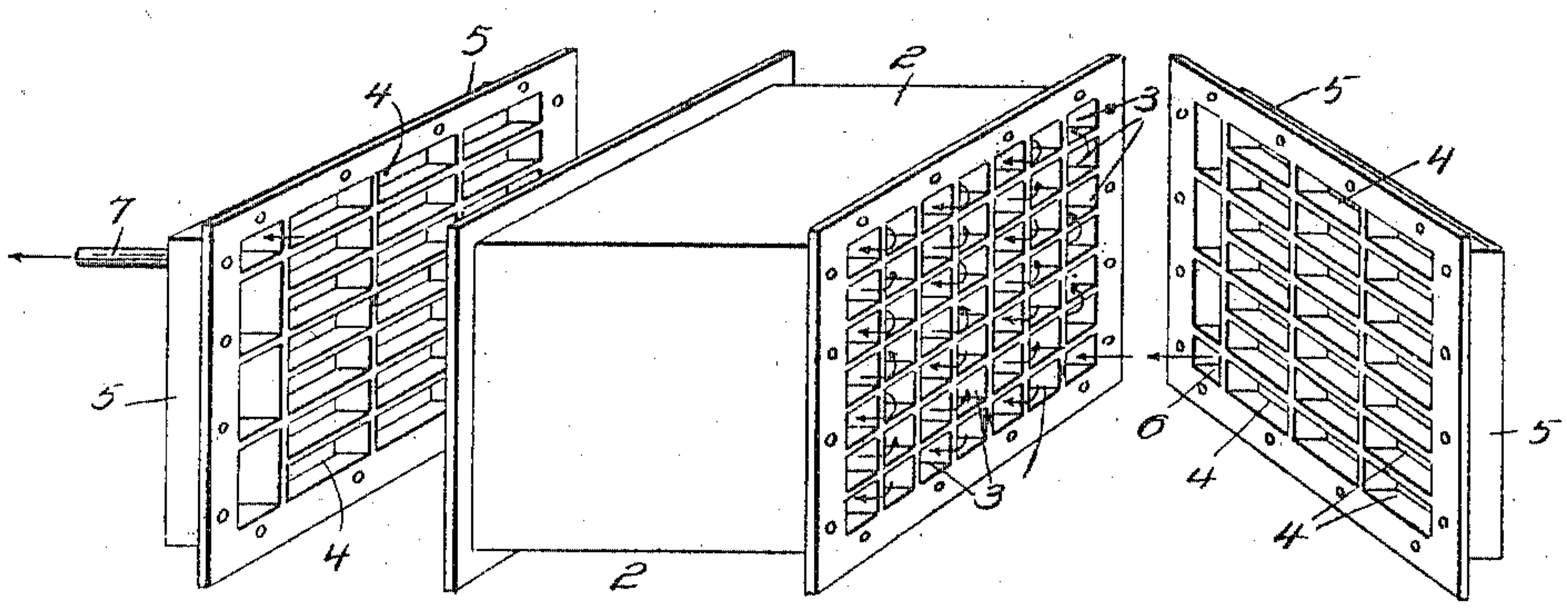
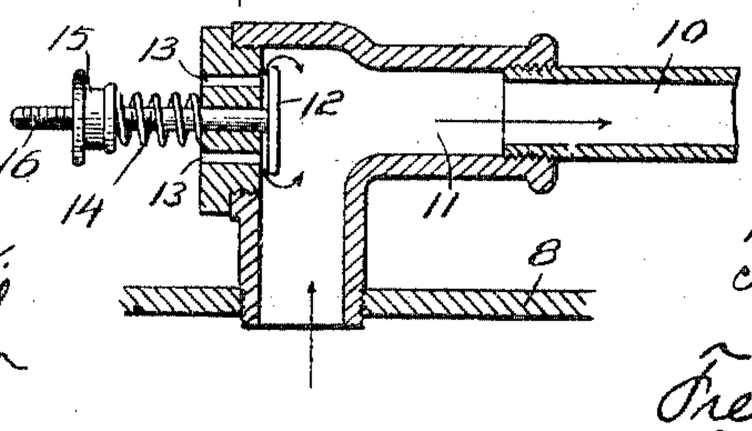


Fig. 2.

Fig. 3.



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WILLIAM BROWN AND JAMES BROWN, OF VANCOUVER, CANADA.

CARBURETER.

No. 817,218. Specification of Letters Patent. Patented April 10, 1906.

Application filed October 20, 1905. Serial No. 283,654.

To all whom it may concern:

Be it known that we, WILLIAM BROWN and JAMES BROWN, citizens of the Dominion of Canada, residing at Vancouver, in the Province of British Columbia, Canada, have invented new and useful Improvements in Carbureters, of which the following is a specification.

Our invention relates to an improved carbureter which is designed to derive from light hydrocarbon oils an explosive gas, such as is used as a source of power in gas-engines or for lighting or heating.

In the ordinary use of hydrocarbon oils for the generation of an explosive or burning gas the customary method is to vaporize the oil either in the cylinder of the engine immediately prior to its admission thereto or in the burner, in which case a considerable amount of waste may occur through incomplete vaporization of the oil or insufficient admixture of the same with the air required for combustion. Our effort has therefore been directed to the generation of the gas and the maintenance of a supply thereof, which may be drawn upon as required, and to effect this purpose we provide a chamber having a connected series of passages through which atmospheric air may be passed, and these passages are charged with an absorbent material which is saturated with a light hydrocarbon oil, a state of saturation being maintained by a tank adjacent. Atmospheric air is passed through these passages and being brought in contact with the oil in a finely-divided state thoroughly mixes with the volatile elements thereof. The gas so derived is delivered into the tank which holds the oil reserve, from which it may be withdrawn as required, provision being made for the further admixture of the saturated gas with atmospheric air when found necessary.

The particular construction of the carbureter and its arrangement in relation to the tank are fully described in the following specification, reference being made to the drawings which accompany it.

Figure 1 is a vertical section through the carbureter on the plane of its delivery-outlet to the tank; Fig. 2, a perspective view of the carbureter with the covers withdrawn to show the means for connecting the passages; and Fig. 3, a detail section of the valve by which the saturated gas may be diluted with atmospheric air, as required, during its delivery to the engine.

In the drawings, 2 represents the carbureter-chamber, which is divided vertically and horizontally, so as to form a series of elongated passages 3, and adjacent passages are so connected by divided spaces 4 in the end covers 5 as to form one continuous passage back and forth along each row successively from the inlet 6 to the delivery 7 These passages 3 of the carbureter are charged with an absorbent material, such as cotton-waste, which will become saturated with oil from the tank 8, to the under side of which the delivery-pipe 7 is connected, preferably through a check-valve 9.

To the upper end of the tank 8 is connected the pipe 10, through which the gas is withdrawn for the engine-supply, and this supply-pipe 10 may be connected by an elbow 11, (see Fig. 3,) having a light valve 12 seating over apertures 13 in the end opposite the pipe 10 and maintained seated over these apertures by a light spring 14, the effort of which may be regulated by a nut 15 on the screwed stem 16 of the disk valve, so as to allow the valve to open inward under the pulsation of withdrawal of the gas by the engine through the pipe 10 and allow atmospheric air to flow through the apertures 13 and mix with the saturated gas from the tank 8 before delivery to the engine.

On air being forced through the supply-pipe 6 it will percolate through the interstices of the oil-saturated waste and will pass successively through the various passages, row after row, until it reaches the delivery-outlet 7, by which time it will be thoroughly charged with the volatile elements of the oil, and will be discharged through the oil in the tank into the upper end thereof.

The check-valve 9 will prevent the carbureter becoming flooded with oil when out of use and the air not passing; but it is anticipated that the pressure of the air when in use will lift the check (which will require to be very light) and that simultaneously a sufficient amount of oil will trickle through to maintain the saturation of the absorbent material in the carbureter.

The air may be heated before delivery to facilitate the volatilization of the oil.

In the illustration no attempt is made to show the proper proportion of tank and carbureter-chamber, which has not yet been fully determined.

Having now described our invention and the manner of its application, we hereby de-

clare that what we claim as new, and desire to be protected in by Letters Patent, is—

1. In a carbureter, a casing provided with a plurality of elongated passages running from end to end, absorbent material held in said passages, header-plates for each of said ends, and provided with connecting-passages for said elongated passages of the casing to connect them in a serial arrangement, means for introducing atmospheric air to the said passages at the beginning of the series, means for conveying off the gas from the end of the series of passages, an oil-reservoir for containing hydrocarbon liquid having a valve-controlled inlet in its bottom, said means for conveying off the gas being also connected to the valve-inlet of the oil-reservoir, means for withdrawing the gas from the upper end of the oil-reservoir, and a spring-controlled air-valve opening inward in the withdrawal-pipe.

2. The combination with an oil-reservoir having a valve-controlled aperture in its bottom, an offtake-pipe connected through the top of said reservoir, of a carbureter comprising a casing having a plurality of parallelly-arranged elongated passages, means at the end of said casing for connecting said passages in serial arrangement, means connecting one end of said series of passages with the valved aperture in the bottom of the oil-reservoir, and means for admitting air into the other end of said series of passages.

3. The combination with an oil-reservoir having a valve-controlled aperture in its bottom, an offtake-pipe connected through the top of said reservoir, of a carbureter comprising a casing having a plurality of parallelly-arranged elongated passages, means at the end of said casing for connecting said passages in serial arrangement, means connecting one end of said series of passages with the valved aperture in the bottom of the oil-reservoir, means for admitting air into the other end of said series of passages, absorbent material within the elongated passages of said casing only, substantially as shown and described.

4. In a carbureter, an open-ended rectangular chamber divided by horizontal and vertical partitions into a series of elongated passages, covers for the ends of the chamber having recesses which will connect adjacent passages to form a continuous passage from an inlet in one of the lower ones to an outlet from one of the upper ones, means for delivering atmospheric air to the inlet and means for connecting the outlet to the lower end of an oil-tank.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM BROWN.
JAMES BROWN.

Witnesses:
ROBERT G. BROWN,
ROWLAND BRITTAIN.