J. M. POLLARD & W. R. BARTON.

CARBURETER.

No. 180,061. Patented July 18, 1876.

Fig. 1.

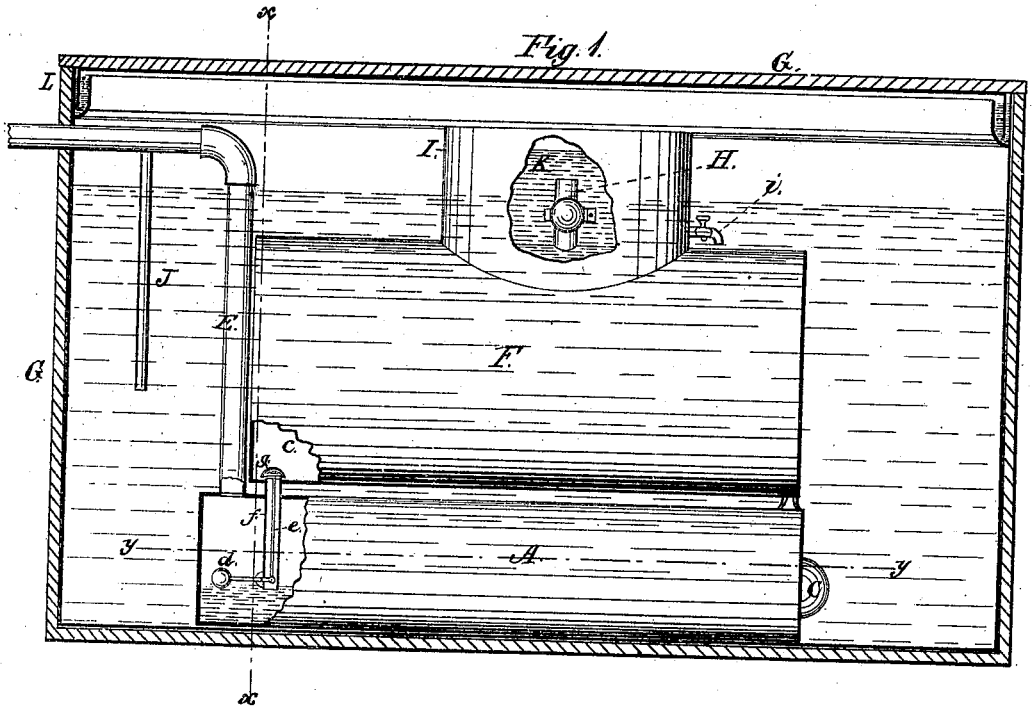


Fig. 2.

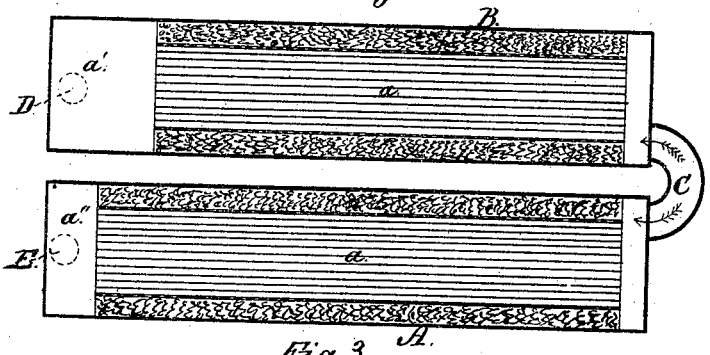
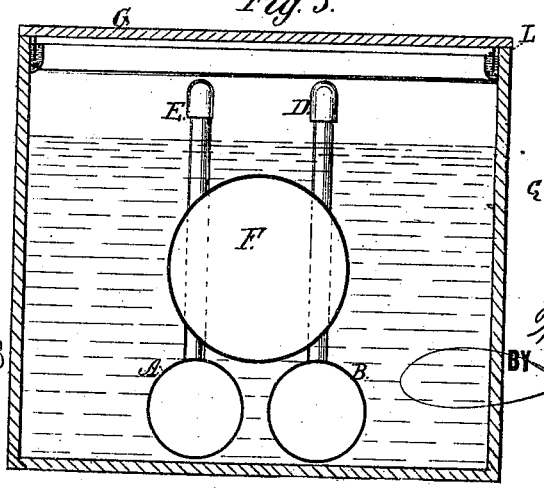


Fig. 3.



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JAMES M. POLLARD, OF NEW ORLEANS, LOUISIANA, AND WALLACE R. BARTON, OF GALVESTON, TEXAS, ASSIGNORS TO THE SOUTHERN GAS MACHINE COMPANY, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN CARBURETERS.

Specification forming part of Letters Patent No. **180,061**, dated July 18, 1876; application filed January 3, 1876.

To all whom it may concern:

Be it known that we, JAMES M. POLLARD, of New Orleans, parish of Orleans, State of Louisiana, and WALLACE R. BARTON, of Galveston, county of Galveston and State of Texas, have invented a new and useful Improvement in Carbureters; and we do hereby declare that the following is a full, clear, and exact description of the same.

Our invention is an improvement in the class of gas-carbureters in which the apparatus is submerged in water for the purpose of equalizing the temperature of the carbureting-liquid, and thereby imparting a more uniform illuminating quality to the gas; also obviating the danger of explosion from access of flame to the exterior of the apparatus.

The invention relates to the construction and arrangement of parts, hereinafter described, and specified in the claims.

In the accompanying drawing, forming part of this specification, Figure 1 is a sectional elevation of our improved apparatus, and Fig. 2 a horizontal section of the carbureting-cylinders. Fig. 3 is a cross-section of the apparatus, taken on line *x x* of Fig. 1.

The carbureter proper is constructed of two or more parallel horizontal cylinders, A B, connected at one end by the pipe C, and tightly packed around the inside with asbestus or other suitable material, leaving a longitudinal cylindrical space through the center, which is closely filled with parallel strips of cloth *a*, or equivalent strips of fibrous material.

The gas enters cylinder B at the point *a'* through pipe D, passes through the absorbent therein, and, by pipe C, into the second cylinder A, from which it escapes at *a''* through pipe E. The carbureting-liquid enters the carbureter, from the reservoir F, at the point *c*, near the end of cylinder B, and adjacent to the exit of the gas. After saturating the absorbent therein it passes through the pipe C into the second cylinder A, and reaches the point *a'*, at which the gas enters the carbureter. The liquid and gas thus flow in opposite directions through the whole length of the carbureter, from which it results that the least vaporizable portion of the liquid is carried around to the extremity of the carbureter, and to the point where the gas in entering the carbureter impinges directly and forcibly upon it. The gas at this point, or upon its entrance, possesses very great affinity for the hydrocarbon liquid, and readily absorbs it, even when too heavy to be vaporized in the ordinary manner. Hence, all the liquid is vaporized, and no residuum left — a result economically important.

In order to regulate the escape of liquid from the reservoir F to the cylinders we employ a float, *d*, provided with a vertical rod, *e*, working in a tube, *f*, and operating a valve, *g*, as will be readily understood by the drawing.

The eduction and induction pipes D E, Fig. 3, rise vertically from the respective cylinders A B, and are connected by a tube and stop-cock, (not shown,) whereby the whole or a portion of the gas may be allowed to pass without entering the cylinders.

The whole apparatus—cylinders, reservoir, and gas supply and discharge pipes—is secured to the bottom of a tank, G, made sufficiently larger than said apparatus to admit a large body of water on all sides of it, and between it and the tank. From the pipe D an open drip-pipe projects downward into the water to a considerable depth.

It is apparent that so much of the gasoline as condenses in the pipes and flows back toward the carbureter will rest on the surface of the water in the drip-pipe J, till, overflowing the upper portion of said pipe, it returns to the carbureter proper. This it does by its lighter specific gravity. If, on the other hand, water of condensation enters the drip-pipe, it necessarily sinks to the level of the body of water in the tank G, which the gasoline cannot do. This prevents access of fire to the carbureting apparatus, and thus insures its safety from fire under most conditions, as well as renders the temperature of the carbureting-liquid more uniform, thereby favorably affecting the stable quality of the gas.

In order to fill the carbureter, we use a can or vessel, which has a discharge-tube, which

may be coupled to the tube H of the reservoir, as shown. In order that this tube may be properly sealed it is inclosed by a cylinder, I, which is open at the top, and provided with a stop-cock, *i*. The seal is thus formed by a body of water, K, separate from that in which the carbureter proper is submerged, and also standing at a higher level. When it becomes necessary to have access to the filling-tube H, this water K is drawn or lowered through cock *i*, and when the filling is completed the vessel I is resupplied with water to the requisite depth.

The box is provided with an annular groove, L, into which a flange, M, forming a part of the cover, projects. The groove L being filled with water, the whole is water-sealed.

What we claim is—

1. The drip-pipe J, pendent from that part of the gas-conducting pipe E which is above the body of water in the tank, and extending down into the water, as shown and described, for the purpose specified.

2. The combination, with the hydrocarbon-reservoir, provided with the filling-tube H, of the cylinder, containing the liquid seal, and provided with a cock for discharging the liquid, as set forth and described.

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