

C. A. WHITE.

GAS GENERATOR AND CARBURETER.

No. 175,801.

Patented April 4, 1876.

Fig. 1.

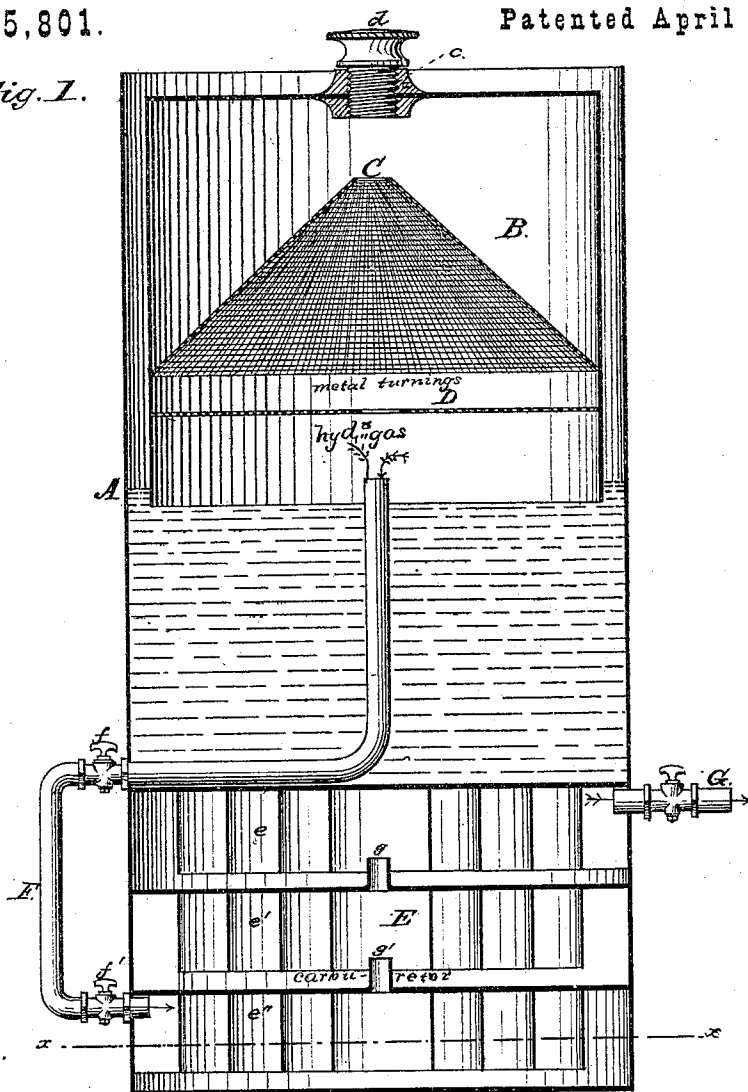
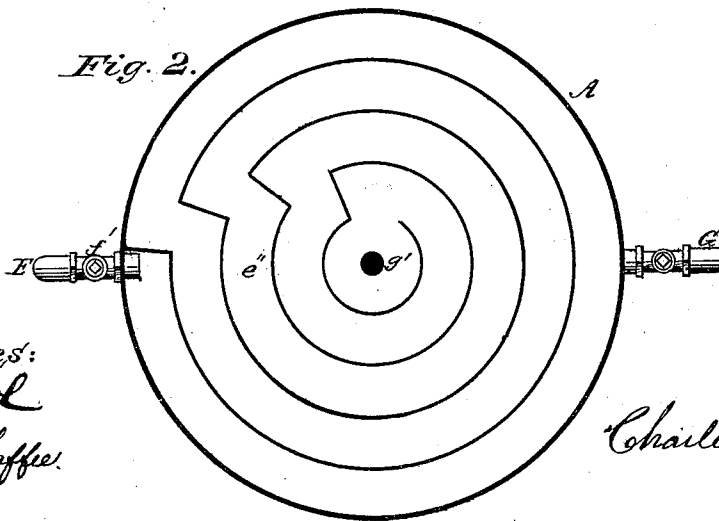


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN GAS GENERATORS AND CARBURETERS.

Specification forming part of Letters Patent No. **175,801**, dated April 4, 1876; application filed March 29, 1876.

To all whom it may concern:

Be it known that I, CHARLES A. WHITE, of the city of Hartford, in the State of Connecticut, have invented a new and useful Improvement in Machines for Generating and Carbureting Gas for illuminating purposes, of which the following specification and its accompanying drawings is a full, clear, and exact description.

The object of my invention is to produce a simple, convenient, and inexpensive apparatus for the manufacture of carbureted-hydrogen gas for illuminating purposes; and it consists in the combination and arrangement of devices hereinafter set forth.

In the drawings, Figure I represents a longitudinal section of the apparatus complete. Fig. II represents a cross-section of one of the coils and a portion of the induction and education pipes of the carbureter.

In Fig. I, A is a cylinder, closed at the bottom and open at the top, which serves as a tank for the reception of the dilute acid, and the gasometer B. Said gasometer is provided with the perforated cone C, a short distance below which is situated the perforated diaphragm D, whose perforations are preferably finer than those of the cone. Both the cone and the diaphragm have central apertures, to give place to the tube F when the apparatus is prepared for use, as hereinafter described. At the top of the gasometer is the aperture *c*, closed by the screw *d*. Beneath the cylinder is situated the carbureter E, provided with the coils or scroll-chambers *e e'*, for the reception of the carbon oil. The floors of the chambers *e e'* have central perforations, in which are set the short open tubes *g g'*. The tube F, provided with cocks *f f'*, is for the passage of the gas from the generator to the carbureter, and the short tube G forms the connection between the latter and the service-pipe.

The preparation of the machine for work and its operation are as follows: The carbon oil is introduced through the tube G into the upper coil or scroll-chamber, filling the space surrounding the tube *g*, and overflowing the same. The surplus passes down into the chamber *e'*, where a similar overflow occurs, and the charge is continued until the lower chamber is occupied to a level with the mouth of the tube F. The cocks in said tubes F and G are then closed, and the connection with

the service-pipe is made. The cylinder or reservoir A is now charged with dilute acid nearly to the top of tube F. The gasometer B is then supplied through the aperture *c* with scraps or chips of iron or zinc, which are kept in a proper state of distribution by the cone C and diaphragm D, the finer portions dropping through the former and resting upon the latter. The gasometer is now placed within the cylinder A, the air permitted to escape, the aperture *c* closed, and the cocks in the pipes F and G opened. In this position the gasometer rests upon the floor of the tank A, the central apertures in the cone and diaphragm admitting through them the tube F, and the charge of iron or zinc is immersed in the dilute acid.

By the reaction of the dilute acid and metal, hydrogen is now set free, and passes through the pipe F into the carbureter. In its passage through the coils it becomes carbureted, and is delivered to the burners as carbureted-hydrogen gas.

As the gas accumulates it raises the gasometer until the charge of iron or zinc is lifted above the level of the dilute acid, when the action immediately ceases. When sufficient gas has been expended to permit the gasometer again to descend the chemical action recommences. The apparatus is thus automatic and self-governing.

I claim—

1. In the gas apparatus herein described, the combination of the gasometer B with the fixed perforated distributing-cone C, constructed to operate substantially as herein shown and described.

2. The combination, with the gasometer B, of the perforated cone C and perforated diaphragm D, in the manner and for the purpose set forth.

3. The combination, with the tank or reservoir A, of the gasometer B, provided with trap-screw *d*, cone C, and diaphragm D, the compound carbureter E, and pipe F, all constructed and arranged to operate as and for the purposes shown and described.

In testimony whereof I hereunto subscribe my name and affix my seal in the presence of two attesting witnesses.

CHARLES A. WHITE. [L. S.]

Witnesses:

W. H. SMITH,
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