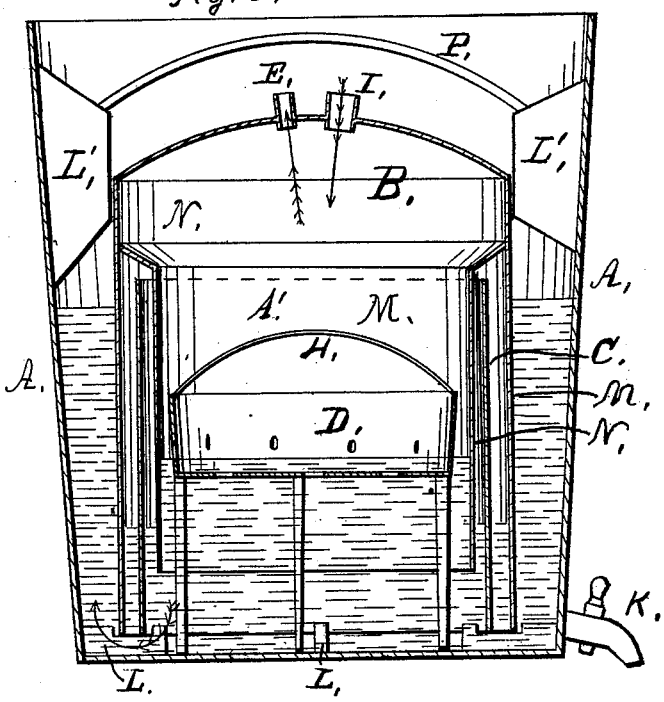
J. F. WILLIAMS.

Hydrogen Gas Generator and Carbureter.

No. 213,600. Patented Mar. 25, 1879.

Fig. 1.



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UNITED STATES PATENT OFFICE.

JOHN F. WILLIAMS, OF CARTHAGE, ILLINOIS.

IMPROVEMENT IN HYDROGEN-GAS GENERATORS AND CARBURETERS.

Specification forming part of Letters Patent No. **213,600**, dated March 25, 1879; application filed October 3, 1878.

To all whom it may concern:

Be it known that I, JOHN F. WILLIAMS, of Carthage, Hancock county, Illinois, have invented a new and useful Improvement in Hydrogen-Gas Generators and Carbureters, which is made substantially as set forth hereinafter, referring to the accompanying drawing, in which the figure is a vertical section of the apparatus.

This invention relates to an improved apparatus for generating gas for illumination and heating purposes.

The apparatus consists of an outer vessel, open at top, having supports, guides, and a cross-bar, in order to hold the rest of the apparatus in place; a gas-holder, closed at top, with an inlet, delivery-pipe, and a projection to catch the condensed gasoline and return it to its proper receptacle; an inner vessel, open at bottom and top, to contain the gasoline, and a vessel or basket having legs and a handle, as hereinafter more fully described and set forth.

The novelty of the apparatus is in the simplicity of the parts as a whole, and the peculiarities of their structure adapting them to this process; in the gasoline-holder C, which retains the gasoline in the central portion, allowing the gas-holder B to be removed and put back without permitting the gasoline to reach the surface of the acid-water, outside of the gas-holder, in vessel A, so as to cause bad odors, and create danger of fire by its evaporation; in the inward projection M, and other details.

The different parts are made of copper or other suitable material, to withstand the acid, in the general form and arrangement as shown.

The vessel A has raised holding-blocks L on the bottom, for the gas and gasoline holders B C to rest on above the bottom. It has guides L′ on its sides, to hold the holder B in place, a cross-bar, P, to retain holder B, and faucet K.

The gas-holder B has a gas-delivery pipe, E, to convey the gas for use, and an inlet, I, with screw-plug or other arrangement, for admitting gasoline as needed to replenish. It rests on blocks L, so that the acid-water can freely pass in or out under it, and is held in place by guides L′ at the sides and cross-bar P above it, connected with sides of vessel A. It has a projection, M, on the inside, near or at the top, so adapted as to cause the condensed gasoline which may collect on the top and sides to drop inside of the gasoline-holder C, and keep it from running down outside of that. This projection M is carried down to any desirable extent, either to near the bottom, as shown, or to any point which will serve the purpose of directing the drip from the top within the gasoline-holder C. In some cases it does not come below the top of that holder, which serves the purpose.

The gasoline-holder C is of such size as to pass inside of the holder B freely. It rests on raised supports L, as does the holder B.

The metal holder D is raised on legs to a suitable height, near midway of the space A′, inside of gas-holder B. It has holes in its bottom for the passage of the acid-water freely up and down. It has a handle, H, for removing it readily.

The metal is put into holder D. Acid-water is put into vessel A, so as to rise in holder D, and gasoline is put in with it by inlet I, inside of gasoline-holder C, as desired.

The water contains sulphuric or other acid, suitable for acting on iron, zinc, or other metal used to produce hydrogen gas. It rises in chamber A′ into holder D, so as to act on the metal and produce the gas. The gasoline floats on top of the water inside of holder C, so as to be heated by the reaction of the acid-water with the metal in holder D, and be taken up by the nascent gas under the action of the heat, and charge it with hydrocarbon vapor.

When the gas is formed faster than used, it forces the water down from the metal in holder D, and decreases or stops the formation of gas, as required, to keep up a regular supply. This forms an automatic regulation of production and supply. As the gas is used the acid-water rises and increases the production again.

The holder B is taken out by lifting up. This enables the apparatus to be inspected throughout and the supply of metal to be increased.

The several parts may be modified somewhat in form while retaining their arrangement to serve the purpose, substantially as set forth.

I claim—

The gas-generator consisting of the combination of the outer vessel, A, having supports L L, guides L′ L′, and cross-bar P, the holder B, having inlet I, delivery-pipe E, and drip projection M, the gasoline-holder C, and metal holder D, having legs and handle H, all substantially as described and shown.

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Witnesses:

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