R. V. de GUINON.

Apparatus for Carbureting Hydrogen Gas.

No. 133,569. Patented Dec. 3, 1872.

Fig. 1.

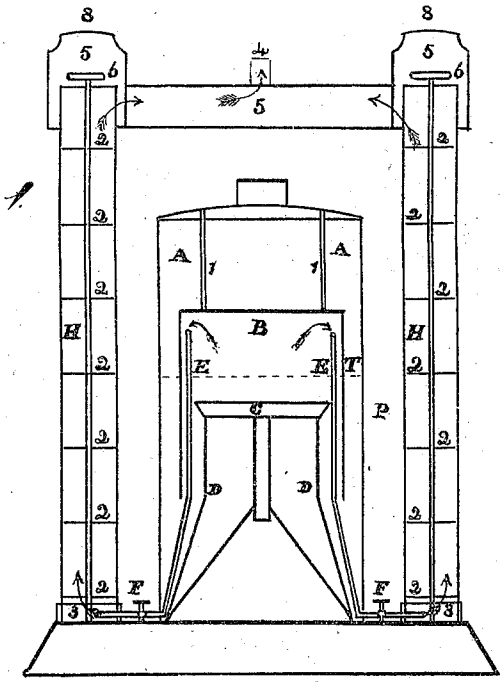
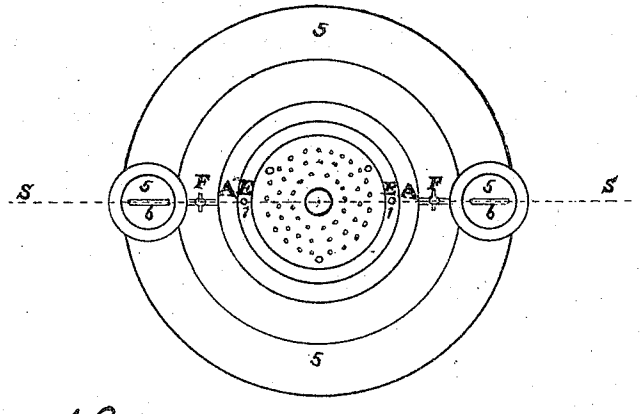


Fig 2



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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

RICHARD V. DE GUINON, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN APPARATUS FOR CARBURETING HYDROGEN GAS.

Specification forming part of Letters Patent No. **133,569**, dated December 3, 1872.

To all whom it may concern:

Be it known that I, RICHARD V. DE GUINON, of Jersey City, Hudson county, State of New Jersey, have invented certain Improvements in Machines for Making Carbureted Hydrogen Gas, of which the following is a specification:

My invention relates to the more fully carbonizing and purifying hydrogen, thereby forming a superior illuminating-gas of great brilliancy, the hydrogen gas being made in the humid way by the action of a solution of sulphuric acid on iron or zinc, and when so formed is made to pass through hydrocarbon, when the two gases combine, forming carbureted hydrogen, or common street-gas of a superior quality.

The accompanying drawing fully illustrates my invention.

Similar letters indicate corresponding parts.

Figure 1 is a vertical section taken through the line S S, Fig. 2. Fig. 2 is a plan view of the machine looking down from the top.

A A is the body; B, the hydrogen-gas chamber. E E are pipes to conduct hydrogen into the carbon-chambers. 3 3 are the carbon-chambers; H H, vertical filtering-columns; C, pan for iron or zinc borings; D D, legs to pan; F F, stop-cocks; 2 2 2, &c., are perforated metal disks; 6 6, rod-supporting disks; 8 8, cap, screwed to top of receiver; 5 5, receiver for gas; 4, the outlet. The arrows indicate the direction taken by the gas when the machine is in operation.

The body A A of the machine is made of any suitable metal or wood that will resist the action of acid. The hydrogen-receiver B, together with the pan C, legs D D, and pipes E E, should be made of copper, that being the most suitable metal. The columns H H and receiver 5 5 at top, may be made of cast or wrought iron. The disks 2 2 2 2, &c., secured to the rods 6 6, may be made of sheet-iron.

Having thus mentioned the various parts of my invention, I will proceed to describe its operation. All the parts being made as above described, you have only to fill the body A A up to the dotted line T, Fig. 1, with about nine parts of water to one of sulphuric acid; then place the pan C, containing the iron borings or zinc, in the acid solution, then placing the hydrogen-receiver B over the said pan, when it will collect the gas formed by the action of the acid on the iron or zinc. The hydrogen so formed will then pass down the tubes E E, thence into the carbon-chamber 3 3, where it passes through the carbon, taking up the required amount to form carbureted hydrogen. The gas thence passes up through the columns H H. These columns are filled with a composition of one-third each of charcoal, iron borings, and hematite iron ore calcined, the whole being well mixed together. This mixture takes up the sulphurous-acid gas that passes off with the hydrogen, and renders the same comparatively pure.

It will be seen that a rod or tube passes down the center of the columns, to which, at stated distances, are secured perforated disks of metal. The said rod and disks sustain the weight of the filtering-composition, thus preventing the same from too closely packing at the bottom of the columns by its own weight, and thereby preventing a free passage of the gas to the receiver 5 5 5.

In the event of cleaning the apparatus and removing the hydrogen-gas chamber, the cocks F F are closed, thus preventing the gas from escaping, as it otherwise would, by removing the said chamber.

Having thus fully described the nature and working of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The upright columns H H, having perforated disks at stated distances, supported from the bottom and containing the filtering substance, as set forth, in combination with the circular gas-receiver 5 5 5, connected with or separated from the body of the machine.

2. The arrangement of the cocks F F, in combination with the body A A of the gas-generator and carbon-chamber, substantially as and for the purposes specified and set forth.

R. V. DE GUINON.

Witnesses:

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