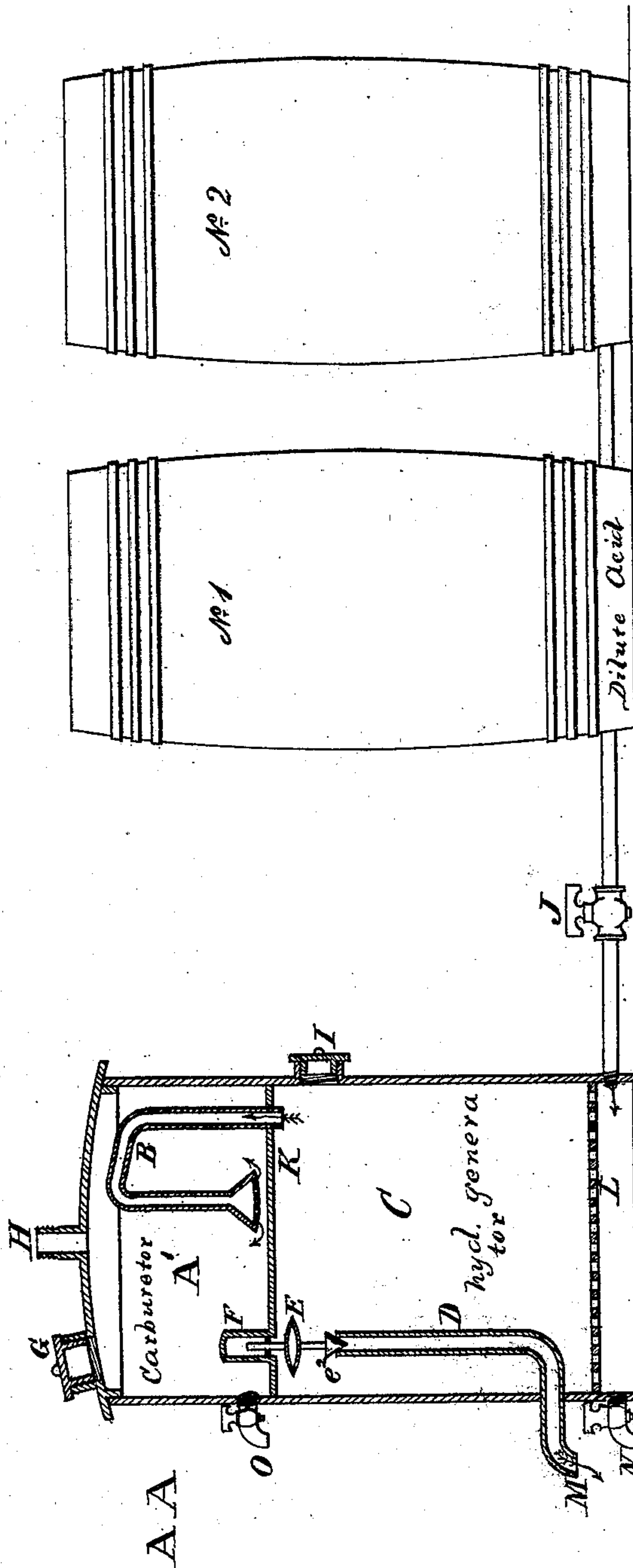


HYDROCARBON GAS APPARATUS.

Patented March 7, 1876.

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UNITED STATES PATENT OFFICE.

JOHN J. CARBERRY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN HYDROCARBON-GAS APPARATUS.

Specification forming part of Letters Patent No. 174,474, dated March 7, 1876; application filed October 11, 1875.

To all whom it may concern:

Be it known that I, JOHN J. CARBERRY, of Philadelphia, State of Pennsylvania, have invented certain Improvements in Hydrocarbon-Gas Apparatus, of which the following is a specification:

The nature of my invention consists in an apparatus that will act automatically, the gas-generating chamber being but a little larger than to contain sufficient iron to generate gas. The dilute sulphuric-acid water is contained in any number of casks. The liquid passes from the casks into the hydrogen-generator, which generates gas at once, and if the gas is not allowed to escape will force the liquid back in the barrels or casks; but when the gas is allowed to escape to the burners, as the dilute acid is spent, it will rise up to the float E, which will rise and open valve e^2 , and will discharge itself automatically, and will let fresh liquid in the generator, which will create gas and force the liquid back in the casks, when the float will fall and close the valve in the discharge-pipe, and will continue to open and close automatically until the liquid is all used or spent in the casks.

Figure 1 is an elevation of my apparatus, showing the gas-generator and casks for holding the dilute sulphuric acid.

A A is a cylindrical copper or wood vessel, having a partition, K, so as to divide it in an upper chamber, A', and lower chamber C, at the bottom of which is a perforated plate for holding the iron turnings. These are inserted through coupling I, after which the screw-coupling is screwed up gas-tight. The gasoline is placed in the upper chamber A' through an opening closed by screw-plug G, and screwed up gas-tight. The pipe B opens in chamber C, and rises up to the top and bends down to the bottom, on chamber A' in the shape of a siphon, with a rose-sprinkler on the bottom, through which the gas passes to be carbureted, and out of the outlet-pipe H to the building. The pipe D is the discharge-pipe for the acid-water. E is the float. e^2 is the valve which rises when the spent acid

reaches the float, and discharges a sufficient quantity to allow the fresh acid-water to pass in the generator. The pressure of gas will then force the liquid down or out of the chamber, and the float will fall and close the valve. The pipe F, which allows the wire guide to rise and fall, is closed tight at the top. O is a stop-cock for drawing off gasoline. M is the discharge-outlet of pipe D. N is screw-plug for drawing off the acid-water or for cleaning the tank. 1 2 are the casks for holding the dilute acid. J is a cock between the hydrogen-generator and dilute-acid holders. The gasoline-holder can be placed outside of the tank A A, if necessary for convenience or safety, and the generator be constructed with only one chamber for generating gas and discharging the spent liquid automatically.

The apparatus is operated in this manner: Iron turnings are placed in the chamber C at screw-coupling I. The gasoline is put in the upper chamber A' at the plug G; the acid-water is then placed in the casks 1 2; the cock J is then opened, and the dilute acid flows through cock J into the gas-generator, beneath the perforated plate, and up through the iron, when the hydrogen gas is generated, which passes up through tube B, and bubbles through the rose-nozzle and through the gasoline, when it becomes carbureted-hydrogen gas, and passes out of pipe H to the building.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The pipe D, in combination with the float E and valve e^1 , for discharging the spent acid-water, as specified.
2. The combination of the vessel A A, the perforated partition L for holding the iron, the discharge-pipe D, float E, valve e^1 , operating together for the purpose set forth and described.

JOHN J. CARBERRY.

Witnesses:

R. N. WETHERILL,
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