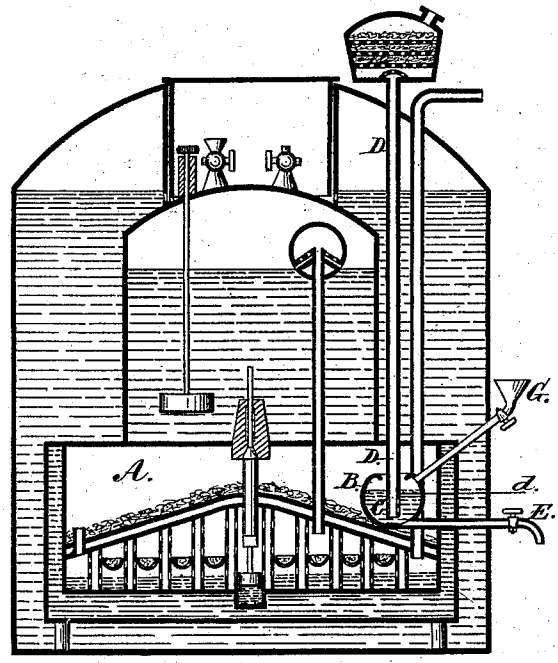
H. W. MERRITT.

Purifier and Regulator for Carbureters.

No. 209,351. Patented Oct. 29, 1878.



Witnesses:

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J. A. Rutherford

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UNITED STATES PATENT OFFICE.

HENRY W. MERRITT, OF SOMERVILLE, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM H. IRELAND AND WILLIAM R. STEARNS, OF BOSTON, MASS.

IMPROVEMENT IN PURIFIER AND REGULATOR FOR CARBURETERS.

Specification forming part of Letters Patent No. **209,351**, dated October 29, 1878; application filed January 25, 1878.

To all whom it may concern:

Be it known that I, HENRY W. MERRITT, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Purifier and Regulator for Carbureters, of which the following is a specification:

This improvement relates to an improved purifier and regulator for use in a gas or air carbureting apparatus.

It has been customary to connect the eduction-pipes of carbureters with purifying-chambers, in which the carbureted gas or air is brought in contact with various substances, such as oyster-shells, pebbles, and the like, for the purpose of condensing any excess of oil-vapor, or caused to pass through water for the same purpose, and with the additional object of regulating the flow of the air or gas through the main or conducting pipe. These purifying and regulating devices have all been more or less inefficient in their action, owing, in the first-mentioned case, to the imperfect contact of the air or gas with the solid condensing-surfaces, which have soon become covered with oil, and, in the latter case, from the water becoming covered or charged with condensed oil, and thereby rendered inoperative for the desired effect.

It is the object of my invention to overcome the objections heretofore existing to devices of this class; and to this end it consists, first, in the combination, with the eduction-pipe and gas or air chamber of a carbureter, of an open vessel, arranged within said gas or air chamber, and containing a liquid compound composed of nitric acid and quicksilver, forming a nitrate of mercury, below the surface of which the inner end of said eduction-pipe extends, so that in order to escape from its said chamber through said pipe the carbureted air or gas must pass, the object of thus passing the carbureted air through the nitrate of mercury formed by the union of the mercury and nitric acid being to separate from the gas the small quantity of acetyline which is always present, and which has an objectionable and disagreeable odor; second, in the combination, with a gas or air carbureter and its eduction-pipe, of a purifier containing a compound of nitric acid and quicksilver, and so arranged that the carbureted gas or air must pass therethrough before its final escape for consumption.

In illustration of my invention, the figure of the accompanying drawing represents a vertical section of the carbureter for which I was granted Letters Patent No. 198,731, December 25, 1877.

The letter A indicates the chamber into which the gas or air is conducted after being carbureted. B is the vessel, preferably formed of lead, and containing a compound of nitric acid and quicksilver, (indicated by C;) and D is the eduction or outlet pipe, the inner end of which is perforated, as shown at *d*, and projects below the surface of the liquid compound C in the vessel D. E is a spout, also preferably of lead, leading from the vessel D outward through the wall of the carbureter, and provided with a suitable stop-cock, by means of which the liquid may be drawn off for the purpose of cleaning out the vessel, which may be again supplied with liquid through a pipe, F, leading inwardly through the carbureter-wall, and supplied with a stop-cock and funnel, G.

The spout E may, if desired, be dispensed with, and the emptying of the vessel D may be effected by a siphon or by a small pump, the suction-pipe of which could be passed down through the eduction-pipe, which should for that purpose be provided with a branch or an opening located above the top of the machine, and provided with suitable means of closing when not in use.

The mixing of the substances of the compound should be performed before its introduction into the vessel D, as during said mixing an offensive gas is emitted, which, however, soon passes off, leaving the liquid free from odor and transparent. I find this liquid when properly used to be a most efficient regulator and purifier of the carbureted air or gas, which, after passing through it, burns with a clear and steady flame, entirely free from smoke.

The carbureted air or gas has in most carbureters escaped directly from the gas-chamber to the eduction-pipe, passing thence to the purifier, of some form; but I prefer to arrange the purifier, as heretofore described, within the

gas-chamber, as shown in the drawing, the pressure of the air or gas causing it to pass through the liquid to gain access to the eduction-pipe through its open end and perforations *d*.

In view of the foregoing description, a further explanation of the operation of my invention is deemed unnecessary.

What I claim is—

1. The combination, with the eduction-pipe and gas or air chamber of a carbureter, of an open vessel arranged within said gas or air chamber, and containing a liquid compound composed of nitric acid and quicksilver, below the surface of which the inner end of said eduction-pipe extends, substantially as described, so that in order to escape from said chamber through said pipe the carbureted air or gas must pass through said compound, by which it is purified and its flow regulated.

2. The combination, with a gas or air carbureter and its eduction-pipe, of a purifier containing a compound of nitric acid and quicksilver, arranged at the inner terminus of said eduction-pipe, so that the carbureted gas or air must pass therethrough before its final escape for consumption, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal in the presence of the subscribing witnesses.

HENRY W. MERRITT. [L. S.]

Witnesses:
ADDINGTON SMALL,
WM. CARLTON IRELAND.