

UNITED STATES PATENT OFFICE.

ALFRED MARSH, OF DETROIT, MICHIGAN, ASSIGNOR TO JOHN Q. DUDLEY,
OF SAME PLACE.

IMPROVED METHOD OF PREVENTING DEPOSITION OF CARBON IN GAS-RETORTS.

Specification forming part of Letters Patent No. **25,790**, dated October 11, 1859.

To all whom it may concern:

Be it known that I, ALFRED MARSH, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in the Manufacture of Illuminating-Gas; and I do hereby declare that the following is a full, clear, and exact description of the same.

In the manufacture of illuminating-gas, more especially in its manufacture from rosins, rosin-oil, or oils or fats of any kind, the accumulation of carbon on the sides and bottom of the retort has heretofore been a source of great annoyance, requiring the frequent stoppage of the process to clean out the retort.

The object of my invention is to obviate this difficulty and to enable gas to be made continuously; and to this end the nature of my invention consists in the introduction into the retort during the gas-making process of chlorate of potash or other substance which evolves oxygen when heated.

By my invention the oxygen evolved in the retort combines with the excess of carbon in the gas-making material under a moderate heat, and causes the excess of carbon to be removed and to pass out from the retort and along with the gas, instead of precipitating on the sides of the retort.

Chlorate of potassa is the substance which I prefer for this purpose, as it parts with its

oxygen more readily than any other substance known to me. To introduce it into the retort, I make a solution of one-quarter ($\frac{1}{4}$) of an ounce of the salt to one gallon of water, and allow this solution to drop into the retort in carefully-regulated quantities, and as continuously and regularly as possible, either through the same pipe as the material from which the gas is manufactured or by a separate pipe; but I prefer, when practicable, for the sake of convenience and economy of construction to let it enter by the same pipe, for nothing would be gained by its entry through a separate pipe. Care must be taken not to admit any more of the chlorate of potassa to the retort than is necessary to prevent the deposit of carbon, or the quality of the gas will be impaired.

Other salts known to chemists as containing an excess of oxygen may, it is believed, be used in the same or a substantially similar manner.

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

The introduction into the retort during the gas-making process of chlorate of potash or other substance which evolves oxygen when heated, for the purpose set forth.

ALFRED MARSH.

Witnesses:

E. R. BENTLEY,
ELISHA CHASE.