

UNITED STATES PATENT OFFICE.

S. LLOYD WIEGAND, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN THE MANUFACTURE OF ILLUMINATING-GAS.

Specification forming part of Letters Patent No. **39,606**, dated August 18, 1863.

To all whom it may concern:

Be it known that I, S. LLOYD WIEGAND, of the city of Philadelphia and the State of Pennsylvania, have invented a new and useful Process of Manufacturing Illuminating-Gas; and I do hereby declare that the following is a full and exact description thereof.

The nature of my invention consists in separating the volatile parts of coals and other bituminous substances by passing superheated steam through such bituminous substances at a high temperature, and then passing or redistilling the volatile substances thus obtained through another retort at a yet higher temperature, with an additional supply of superheated steam for the purpose of converting them into permanent illuminating-gas.

To enable others skilled in the art to make use of my invention, I will now proceed to describe particularly and fully the manner of conducting this process.

I place in a retort heated to a high temperature, but less than that required to make permanent gas, the coal, peat, or other hydrocarbon to be used, and circulate through it a current or currents of superheated steam. I now pass the products resulting from the distillation thus described into a second retort containing carbon heated to incandescence, (oak-charcoal has proved to be the most eligible form of carbon, but other forms of carbon will answer,) in which second retort both the steam and hydrocarbons are simultaneously decomposed and converted into perma-

nent gas of high illuminating quality. I have found it convenient to place the retort into which the hydrocarbon is first introduced at a higher level than the gas-generating retort, and to have the connecting-tube descending from the first retort to the second retort; but I do not claim any particular form of apparatus for the purpose.

I do not claim as part of this invention the use of superheated steam as a means of facilitating the distillation of oils from hydrocarbons; neither do I claim the simultaneous decomposition of steam and hydrocarbons by the action of heat in the presence of carbon for the purpose of generating illuminating-gas; but

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

The combination of the processes of separating the volatile parts of hydrocarbon by the aid of superheated steam at a lower temperature than will convert the hydrocarbons into gas, and the subsequent decomposition of said volatilized hydrocarbons simultaneously with superheated steam in the presence of incandescent carbon at temperatures which convert both the steam and hydrocarbon vapors into permanent illuminating-gas, when conducted in the manner substantially as set forth or in any other equivalent manner.

S. LLOYD WIEGAND.

Witnesses:

JOHN WHITE,
DENNIS MEAD.