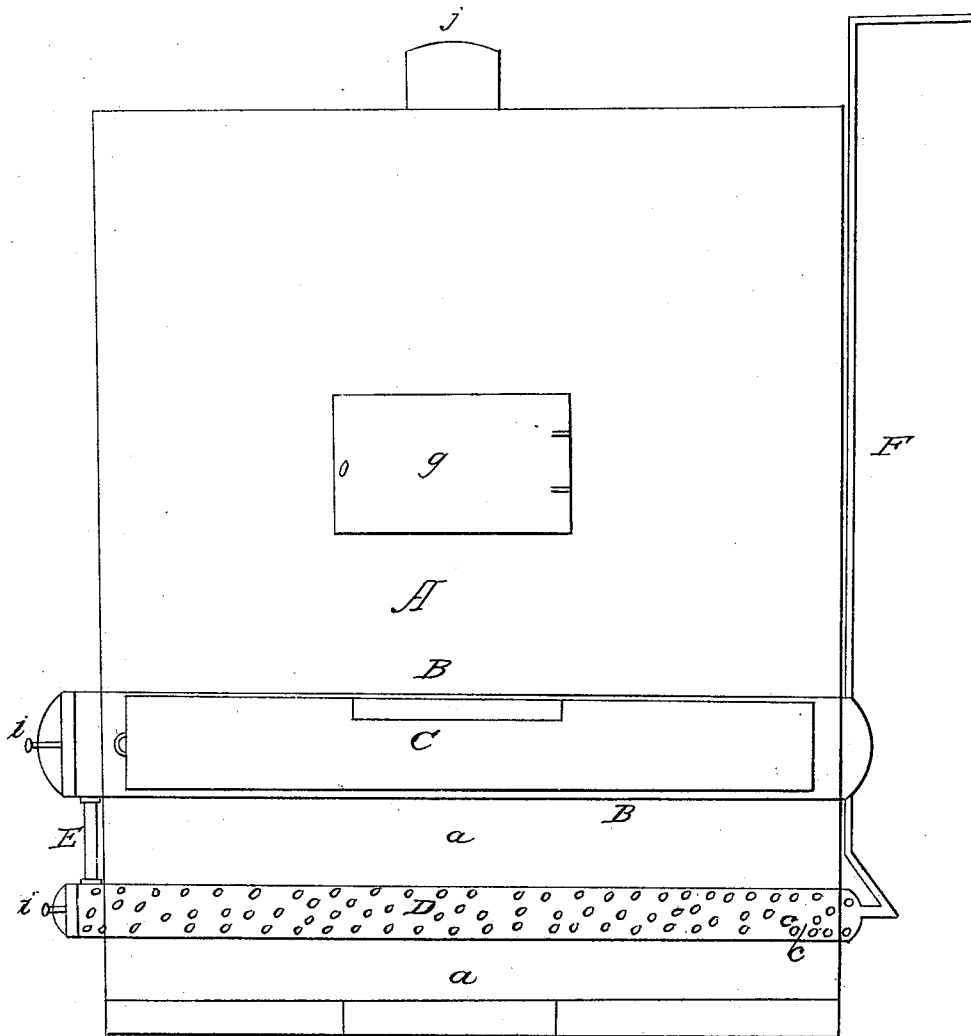


A. GESNER.
Gas Apparatus.

No. 7,052.

Patented Jan'y 29, 1850.



UNITED STATES PATENT OFFICE.

ABRAHAM GESNER, OF HALIFAX, NOVA SCOTIA, CANADA.

MANUFACTURE OF ILLUMINATING-GAS FROM BITUMEN.

Specification of Letters Patent No. 7,052, dated January 29, 1850.

To all whom it may concern:

Be it known that I, ABRAHAM GESNER, of Halifax, in the Province of Nova Scotia, have discovered a new and useful art—the obtaining of illuminating gas from compact and fluid bitumen, asphaltum, chapapote, or mineral pitch as found in mines, quarries and springs in the earth—by which a new hydrocarbon and a new manufacture in gas are produced.

My discovery consists in having obtained from compact and fluid bitumen, asphaltum, chapapote and mineral pitch, a new illuminating gas, which I denominate kerosene gas. This gas differs from all other illuminating gases; for as the bitumen contains no sulfur nor nitrogen, it is free from sulfureted hydrogen, sulfurous acid, sulfo-cyanogen, cyanogen, ammoniacal gas and azote, and its relative quantities of carbon and hydrogen differ from those of the gases heretofore used for the purposes of illumination.

To enable others skilled in the art of making gas to use and employ my discovery, I will proceed to describe in what manner its advantages are to be obtained. Although the gas might be made with the ordinary gas apparatus used for resin, oil, &c., yet from the volatility of the materials I have found it better to subject it at first to a moderate heat by a device found below which shall first convert it to vapor and then forcing the vapor into a second retort kept at a high red heat the material is converted into an excellent illuminating gas. In describing the process therefore we say

The gas may be obtained in the same manner as coal gas but for reasons stated I prefer that the bitumen, or asphaltum be introduced into the retort in an iron case, having an opening in its upper side, one third of its length and one half of its diameter, to allow the gas to escape freely, and which may be withdrawn and charged

at pleasure. In its passage from the retort to the condenser and gasometer, the gas must be passed through a tube, of length and diameter proportionate to the dimensions of the retort, and placed at such a distance from it in the furnace, that while the bitumen is being volatilized the tube, or second retort may be held at a bright red heat. The tube is to be filled with charcoal or coke and quicklime or burnt clay; by passing through it the volatile parts of the bitumen, asphaltum, or mineral pitch become more highly carbonized and all are better adapted for the purposes of affording light, thus,

The gas from the character of the materials to be used requires a modified apparatus, of which the following description and the accompanying drawings and references will serve to explain.

Figure 1 represents a vertical section of the furnace, retort, tube or second retort, and case for holding the bitumen, &c.

A is the body of the furnace; B, the main, or upper retort; C, the case containing the bitumen; D, the tube, or second retort containing the charcoal, coke, quicklime or burnt clay; E, the connecting pipe; F, the gas pipe leading to the condenser and gasometer; *g*, fuel door; *h*, ash pit door; *i i*, retort heads; *j*, the chimney; *a a*, the fuel chamber.

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

1. The use of compact and fluid bitumen, asphaltum, chapapote, or mineral pitch for the production of illuminating gas to be substituted for other materials now in use.

2. I also claim the retort B B in combination with its movable case C in the manner and for the purposes set forth.

ABRAHAM GESNER.

Witnesses:

SAMUEL TRUMAN,
GEO. B. STORM.