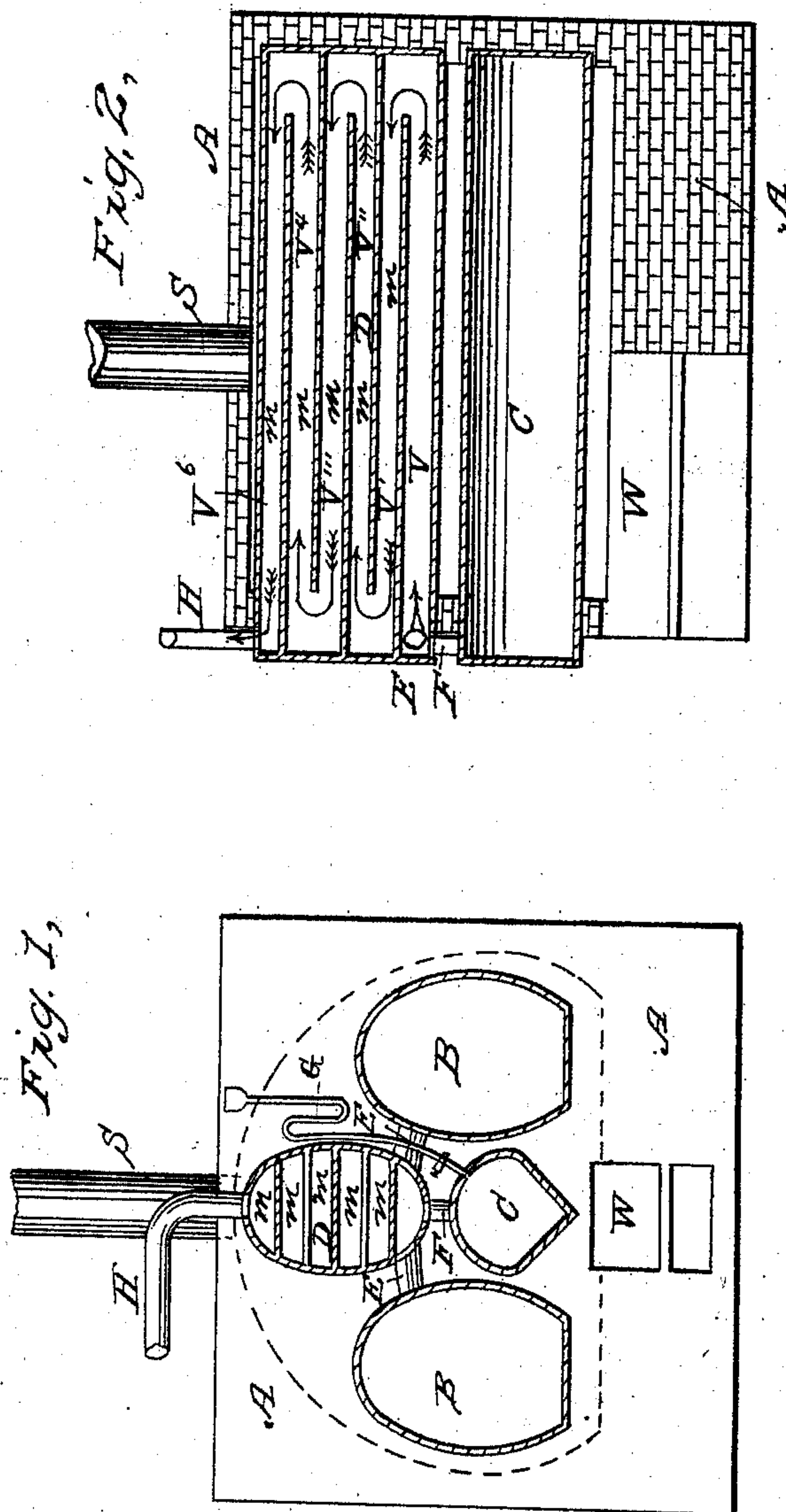


M. LEVY.  
Manufacturing Gas.

No. 37,101.

Patented Dec. 9, 1862.



WITNESSES:

*Henry E. Rinder*  
*Chas. M. Canby*

INVENTOR:

*Mark Levy*



# UNITED STATES PATENT OFFICE.

MARK LEVY, OF NEW YORK, N. Y.

## IMPROVEMENT IN THE MANUFACTURE OF ILLUMINATING-GAS.

Specification forming part of Letters Patent No. **37,101**, dated December 9, 1862.

*To all whom it may concern:*

Be it known that I, MARK LEVY, of New York, in the county and State of New York, have invented a new and useful Improvement in the Manufacture of Illuminating-Gas; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure I represents a front view with the covers of the retorts removed. Fig. II is a longitudinal section through the center.

Similar letters represent similar parts.

The nature of my invention consists in the combination or mixing together of the gases generated from wood and from oil, and then conducting the thus mixed gases through a series of flues, so as to reheat the same some length of time for the purpose of producing a superior illuminating-gas.

Gas generated from wood is very inferior as regards its illuminating power, on account of a great deficiency of carbon, while gas generated from oil contains an excess of carbon. By the arrangement of mixing those two gases together a very superior illuminating-gas is produced. By reheating the thus-mixed gases they increase considerably in density and purity and produce then a gas equal in density and illuminating power to the best rosin gas.

In the accompanying drawings, A represents the brick oven, which contains the different retorts.

B B are the wood-retorts, which are filled with wood, tar, or their equivalent, from which the gas is to be generated.

Directly over the fire-place W a retort, C, is situated, into which the oil is introduced to be converted into gas. Above this oil or carbonizing retort C the reheating-retort D is placed. This reheating-retort D is divided through the partitions *m m*, &c., so as to form a series of flues or passages, V, V<sup>I</sup>, V<sup>II</sup>, V<sup>III</sup>, V<sup>IV</sup>, and V<sup>VI</sup>, backward and forward for the gases to pass in said retort, so as to be reheated before escaping through the pipe H into the purifier and gasometer.

By this process of reheating the gas and at the same time causing the same to travel some distance backward and forward in the flues of the reheating-retort D, the different gases from

the wood and oil will be better mixed together and more effectually deprived of all impurities contained in the same, either by being burned out or by being left behind as residue in said flues, whereby a purer and more superior gas will be produced.

The retorts B B and C are connected through pipes E E and F with the lower flue, V, of the reheating-retort D, through which the gases generated in said retorts pass into the retort D and mix together in the lower flue, V, and pass then backward and forward through the flues V<sup>I</sup>, V<sup>II</sup>, &c., where the same are reheated, as before mentioned.

Near the top of the retort C a small siphon-pipe, G, is attached, through which the oil is introduced into said retort C in the required quantity. A small cock, *w*, is placed at any convenient place in said pipe G, to regulate the quantity of oil required.

Oil, tar, or their equivalents which are converted into gas have considerable residue or slack in the retort, which will very soon form a thick crust in the bottom of the retort and prevent the transmission of the required heat, and is very difficult to be cleaned out. To prevent this difficulty, I apply and use lead, soft solder, or their equivalents in the bottom of the retort, upon which the layer of slack will rest, and can then easily be run out with the same when the retort requires cleaning.

It is obvious that my invention is subject to many modifications, and may be differently constructed in detail, according to circumstances, without departing from its spirit.

Having described the arrangement and operation of my improvement so that any one skilled in the art could make and use the same, I hereby declare that I claim as new and desire to secure by Letters Patent—

The arrangement of mixing the gases generated in separate retorts from wood and from oil, or its equivalent, and then reheating the thus mixed gases before the same are allowed to pass into the purifier and gasometer, in the manner and for the purpose substantially as described.

MARK LEVY.

Witnesses:

HENRY E. ROEDER,  
CHAS. McCARTHY.