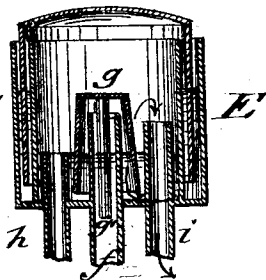
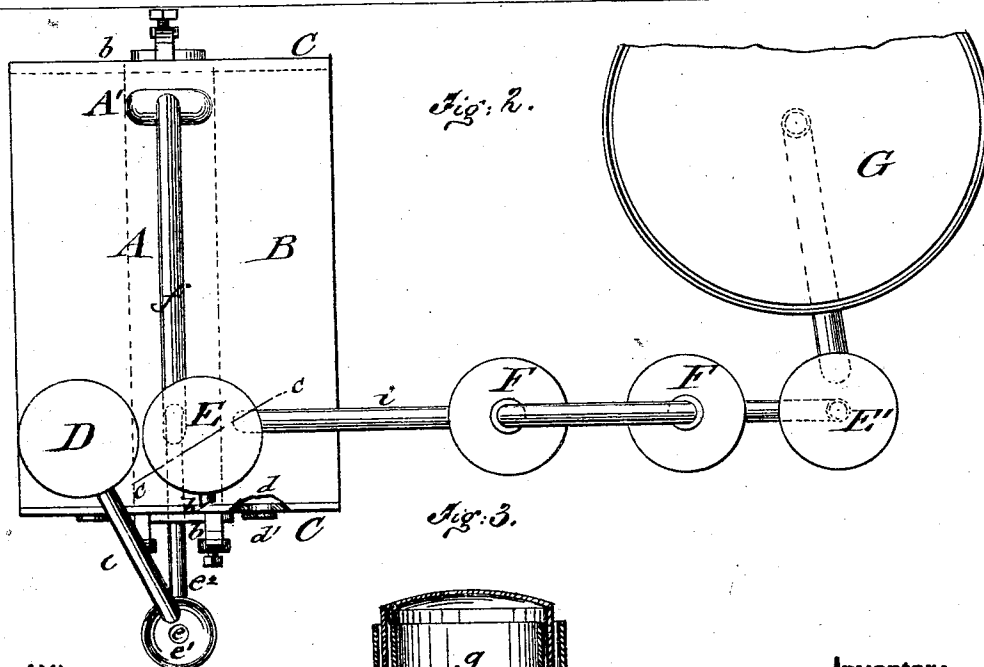
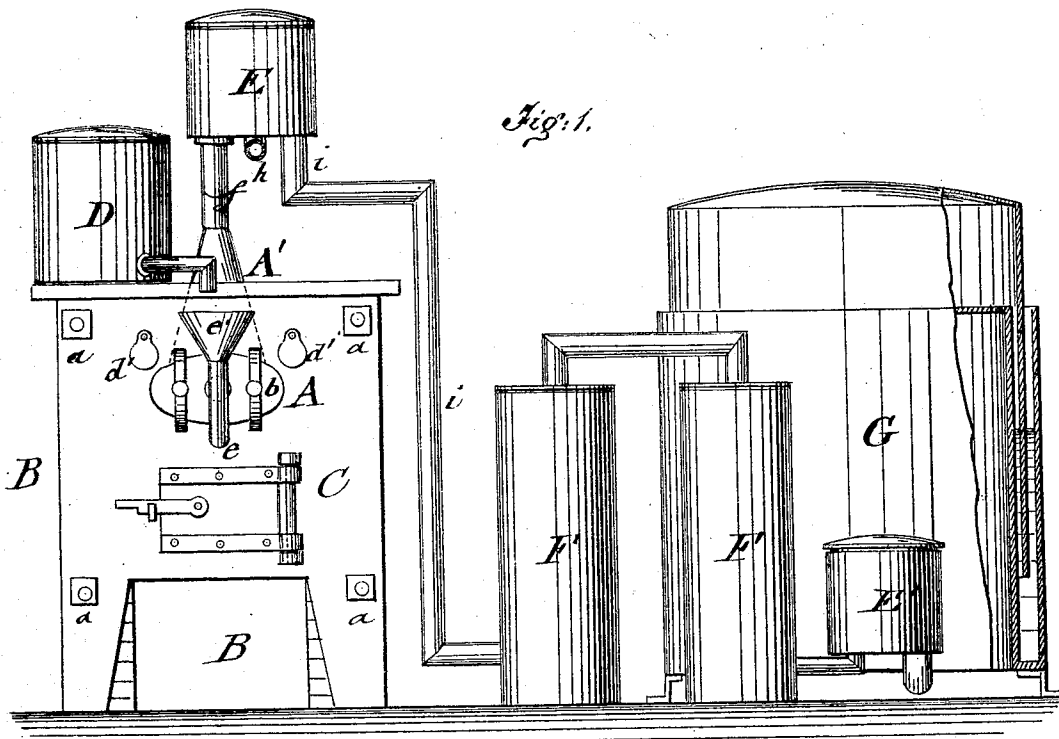


J. G. & W. MULLER.

Apparatus for Manufacturing Illuminating Gas.

No. 145,810.

Patented Dec. 23, 1873.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN G. MÜLLER AND WILLIAM MÜLLER, OF DAYTON, OHIO.

IMPROVEMENT IN APPARATUS FOR MANUFACTURING ILLUMINATING-GAS.

Specification forming part of Letters Patent No. **145,810**, dated December 23, 1873; application filed October 4, 1873.

To all whom it may concern:

Be it known that we, JOHN G. MÜLLER and WILLIAM MÜLLER, of Dayton, in the county of Montgomery and State of Ohio, have invented a new and Improved Apparatus for Making Illuminating-Gas, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a front elevation of our improved apparatus for making gas from coal-oil; Fig. 2, a top view of the same; and Fig. 3, a detail vertical section on the line *c c*, Fig. 2, of the hydraulic valve for connecting different parts of the apparatus.

Similar letters of reference indicate corresponding parts.

The object of our invention is to furnish an improved apparatus for the production of illuminating-gas from coal-oil, by which it may be obtained at cheaper rates, having a greater degree of illuminating power, and being specially adapted for smaller cities.

Our invention is specifically indicated in the claims, and hereinafter described generally, in connection with parts necessary to form a complete or operative apparatus.

In the drawing, A represents the gas-retort, of cast-iron, which is placed longitudinally in furnace B. Furnace B is constructed of fire-brick, in the usual manner, and faced with cast-iron front and rear plates C, which are connected by bolts *a*. The front and rear openings of retort A are closed by doors C, and the state of the retort A is observed by holes *d* with lids *d'* of front plate B. The coal-oil is fed to the retort A from a tank or receptacle, D, as the formation of the gas progresses, entering the retort through a vertical pipe, *e*, with funnel *e'* and the inclined extension *e''* of the same, which latter passes centrally through from door *b*. The retort A connects, by a conical neck, A', and pipe *f*, with the hydraulic valve E. The gas, which is formed after the retort is at red heat, passes up in pipe *f* through the bottom of valve E. The mouth of entrance-pipe *f* is provided with

a conical cap, *g*, which is open at the bottom, and placed in water, through which the gas is forced and cleaned from the tar-vapors. A wire, *g'*, of cap *g*, is applied centrally to the top of the same, and serves to guide cap *g* in the fluctuating motions of the same, preventing, also, the disconnecting of the same from pipe *f*. The tar-water is drawn off from time to time by outlet-pipe *h*. The top part of valve E is made air-tight by being placed with its lower end in tar or other fluid, on the outer casing of the valve, as usual in gas-factories. The gas passes then from valve E, by connecting-pipe *i*, to the purifiers F, which are filled with cokes, and thence, by a hydraulic valve, E', to the gasometer. Valve E' is constructed in the same manner as valve E, and prevents the return of the gas from the gasometer to the other parts of the apparatus. The gas is then ready to be used, being of highly-illuminating quality.

We do not claim a hydraulic valve in combination with a gas apparatus, nor the use of purifiers between the generator and receiver.

Having thus described our invention, we claim as new, and desire to secure by Letters Patent—

1. The arrangement, between the gas generator and receiver, of the valve E, formed of an outer vessel having an annular portion containing liquid for sealing the movable top or cover, the valve *g g'*, and tar-escape pipe *h*, and gas inlet and exit pipes *f' i*, projecting up into the chamber of the valve, all as shown and described, to operate in the manner specified.

2. The improved gas apparatus, formed of reservoir D, retort A with funnel attachment *e e'*, and pipe *f*, valves E E', purifiers F, and receiver G, all constructed and arranged to operate as specified.

JOHN GOTTFRIED MÜLLER.
WILLIAM MÜLLER.

Witnesses:

WILLIAM PATTON,
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