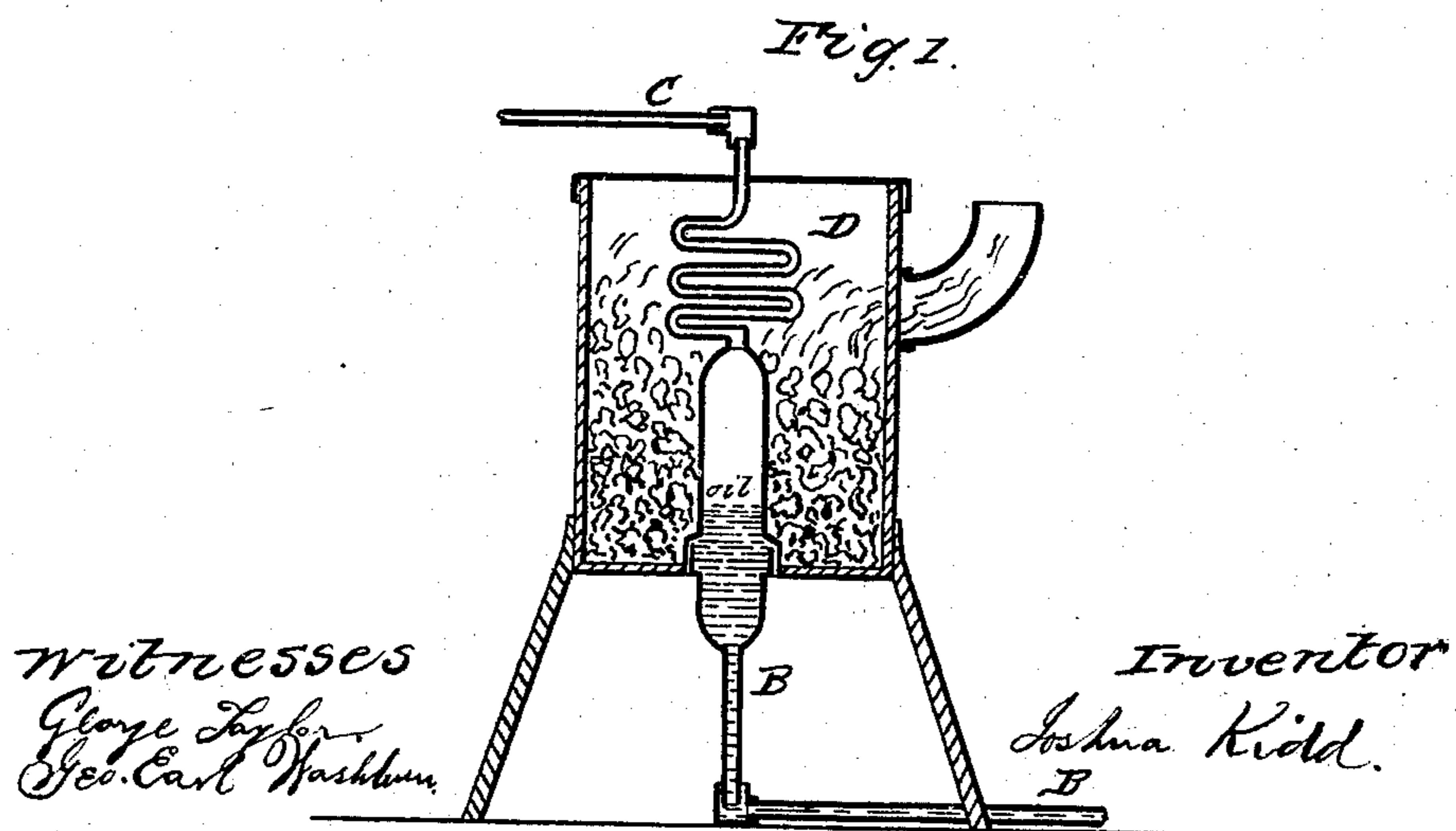
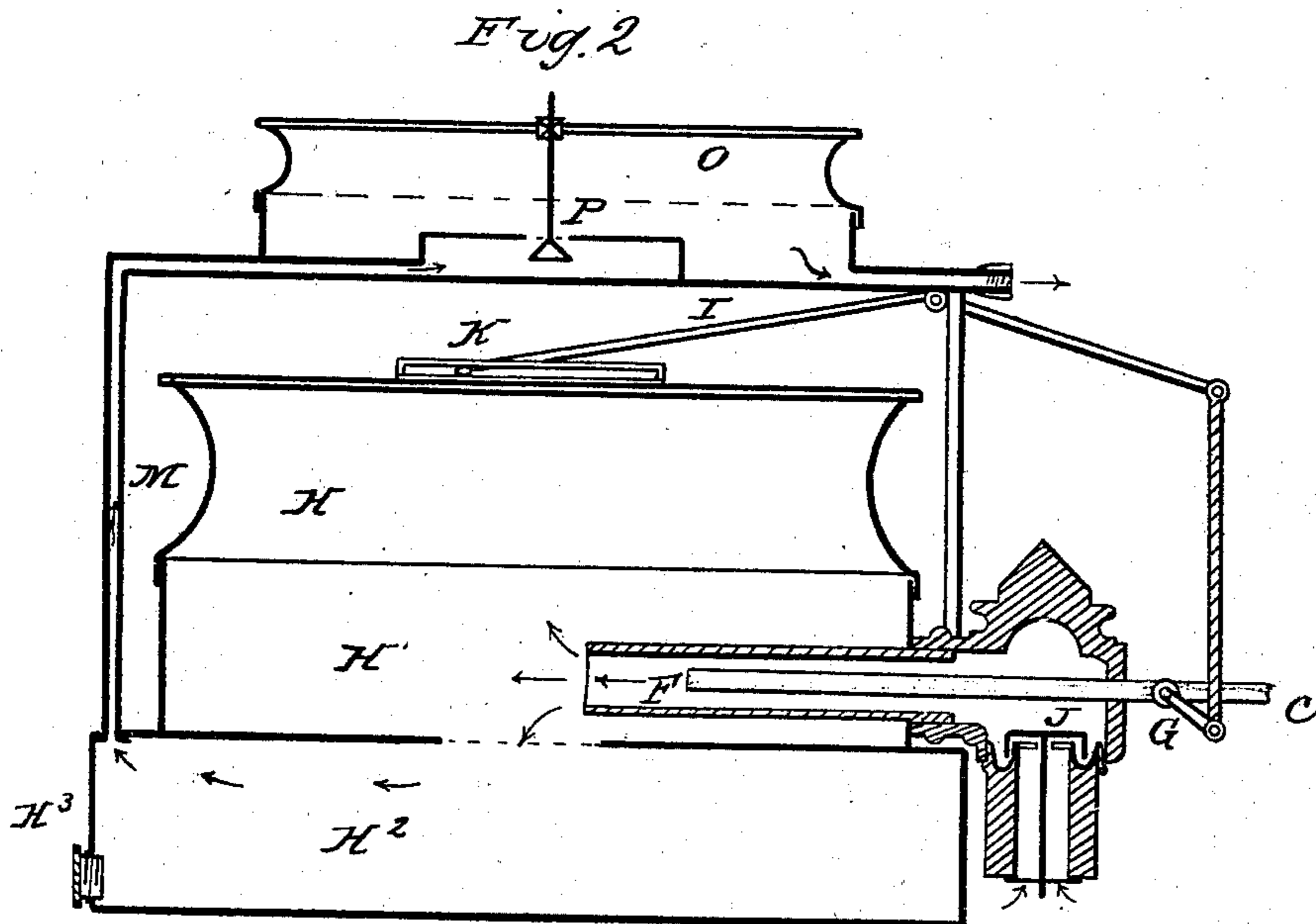


J. KIDD.  
Making Oil Gas.

No. 106,699.

Patented Aug. 23, 1870.



# UNITED STATES PATENT OFFICE.

JOSHUA KIDD, OF NEW YORK, N. Y.

## IMPROVEMENT IN THE MANUFACTURE OF GAS FOR ILLUMINATION, &c.

Specification forming part of Letters Patent No. **106,699**, dated August 23, 1870; patented in England, January 5, 1864.

### *To all to whom it may concern:*

Be it known that I, JOSHUA KIDD, of the city, county, and State of New York, have invented a new and Improved Apparatus for Generating Gas for Lighting and Heating Purposes; and I do hereby declare that the following is an exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the drawing hereunto annexed, and making a part of this specification.

Figure 1 is a central vertical section of retort and fire-box. Fig. 2 is a similar section of a gas-measuring chamber and governor for regulating the supply of gas to the burners.

My improvements in generating gas or vapor consist in heating light oil from the top of its vertical column by forcing it into a perpendicular heated retort, and in mixing the gaseous vapor with atmospheric air by an induced current caused by the escaping force of the gas, and in regulating the flow of the mixed gas or vapor for lighting and heating purposes. This improved method of generating gas dispenses with a gas-holder, and makes the gas-supply to the burners automatic.

When all the burners are shut off the pressure of the gas in the retort drives the liquid away from the heated part thereof, and allows it to return again as soon as the burners are opened and the pressure in the retort reduced.

This method of generating gas I patented in England, and the same is described in specification No. 33, January 5, 1864. I further improved this apparatus by putting a heavy pressure on the liquid forced into the retort, and mixing the gas or vapor with air; and I obtained an English patent for this improvement, dated February 17, 1866, number of specification 513. The gas, in escaping out of the heated retort, passes through a small pipe placed in a larger pipe, and in escaping induces and carries with it a current of air. This mixture of gas and air passes into a meter, which I patented in England on July 7, 1862, number of specification 1,955. This meter consists of one measuring-chamber, which, as it rises and falls, opens and closes a valve, and is combined with a gas-regulator, and when used for the purposes of this invention I dispense with the dial and clock-work shown in the said specification.

### *Description of Drawing.*

Fig. 1, A shows the retort; B B, the oil-inlet pipe. The oil entering by this pipe must have from twenty-five to thirty-five pounds pressure put upon it, either by compressed air or by elevating the oil-reservoir a sufficient height above the retort.

D shows the fire-box; C C, the gas-outlet pipe, which is placed in a larger pipe. (Shown at F in Fig. 2.)

When the bellows H falls it actuates the levers I I I and opens the cock G, and the escaping force of the gas or vapor lifts the air-valve J, and induces or draws a current of air with it, which mixes with the gas or vapor entering the measuring-chamber H<sup>1</sup>. As the bellows H rises it closes the cock G. The suction thus being removed from the air-valve J it closes and seals itself by falling into a circular channel, L, partly filled with mercury.

K are wire slots, in which a wire cross-bar, attached to levers I I I, slides. H<sup>2</sup> is a well or receptacle for condensation, which is drawn off at plug H<sup>3</sup>; M, gas-pipe leading from measuring-chamber to regulator; N, gas-regulator, composed of a disk, O, and valve P, which is balanced on the pressure of gas.

The bellows of regulator N and measuring-chamber H may be made like the bellows of an ordinary gas-meter, if required.

When a small quantity of gas only is required the retort may be made of copper and heated by one or more gas-jets.

When water is evaporated in the retort instead of oil this apparatus may be used for inducing a current of air for ventilating purposes.

I claim—

1. The apparatus for generating gas or vapor under pressure, and the method of regulating the supply of gas for one or more burners, as described.

2. Also, heating the oil from the top of its vertical column under pressure, substantially as set forth.

JOSHUA KIDD.

Witnesses:

GEORGE TAYLOR,  
GEO. EARL WASHBURN.