

JOHN B. TERRY

MANUFACTURE OF ILLUMINATING GAS

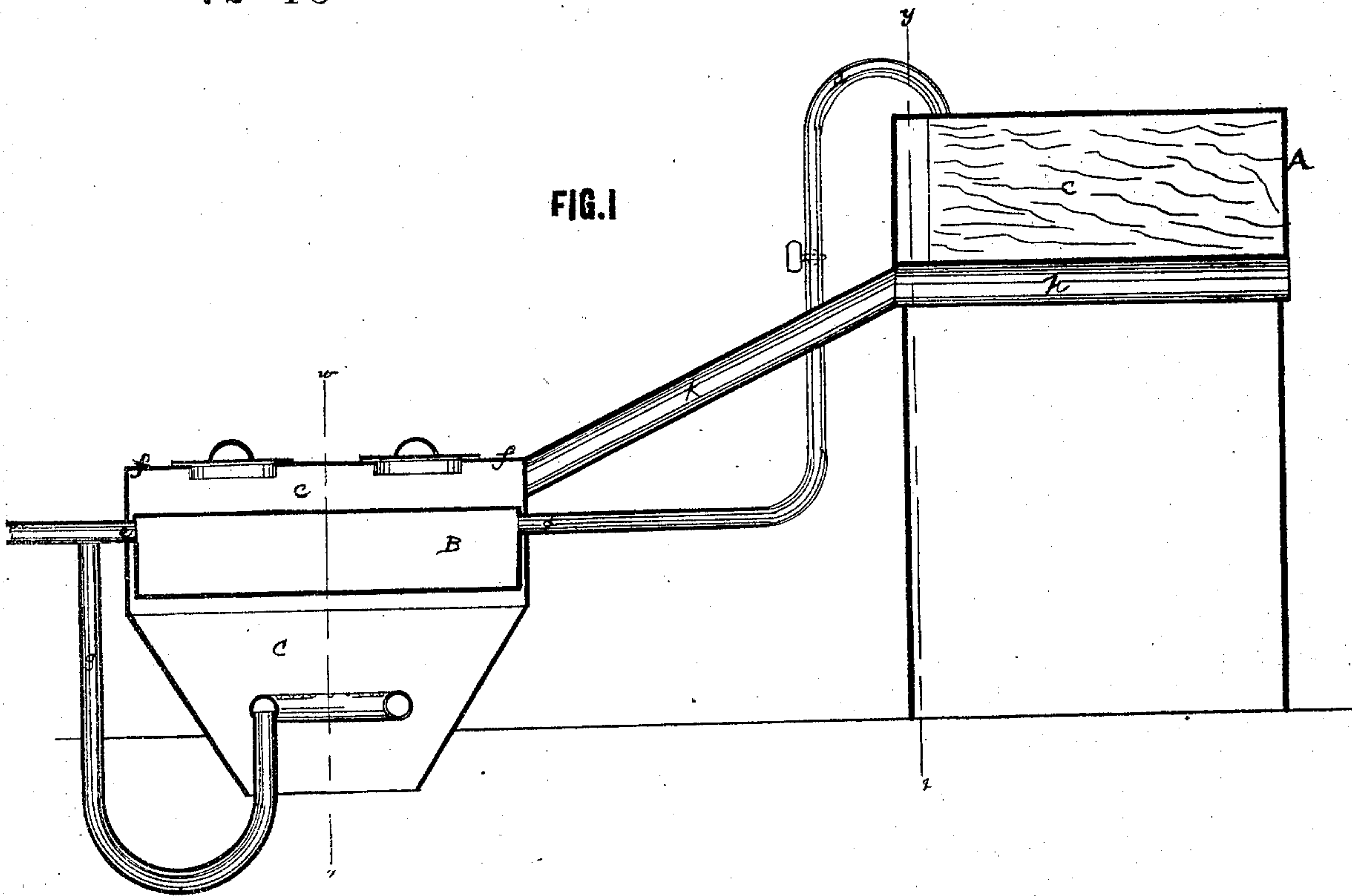
2 sheets sheet 1

PATENTED

DEC 10 1867

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FIG. 1



John B. Terry
by his attorney
A. P. Cook

WITNESSES

M. B. Baily
Chas. E. Page Jr.

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Sheet II
MANUFACTURE OF ILLUMINATING GAS

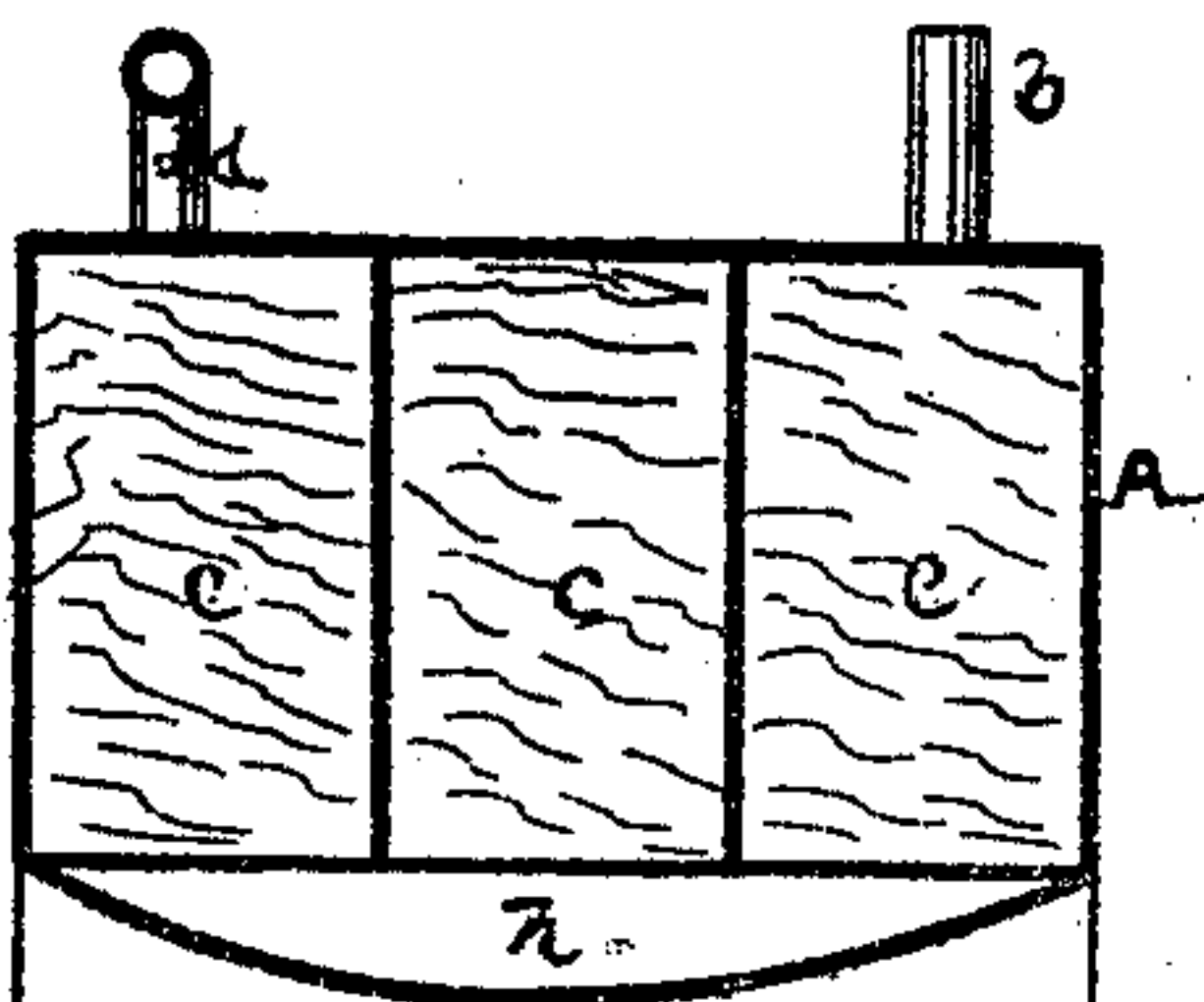
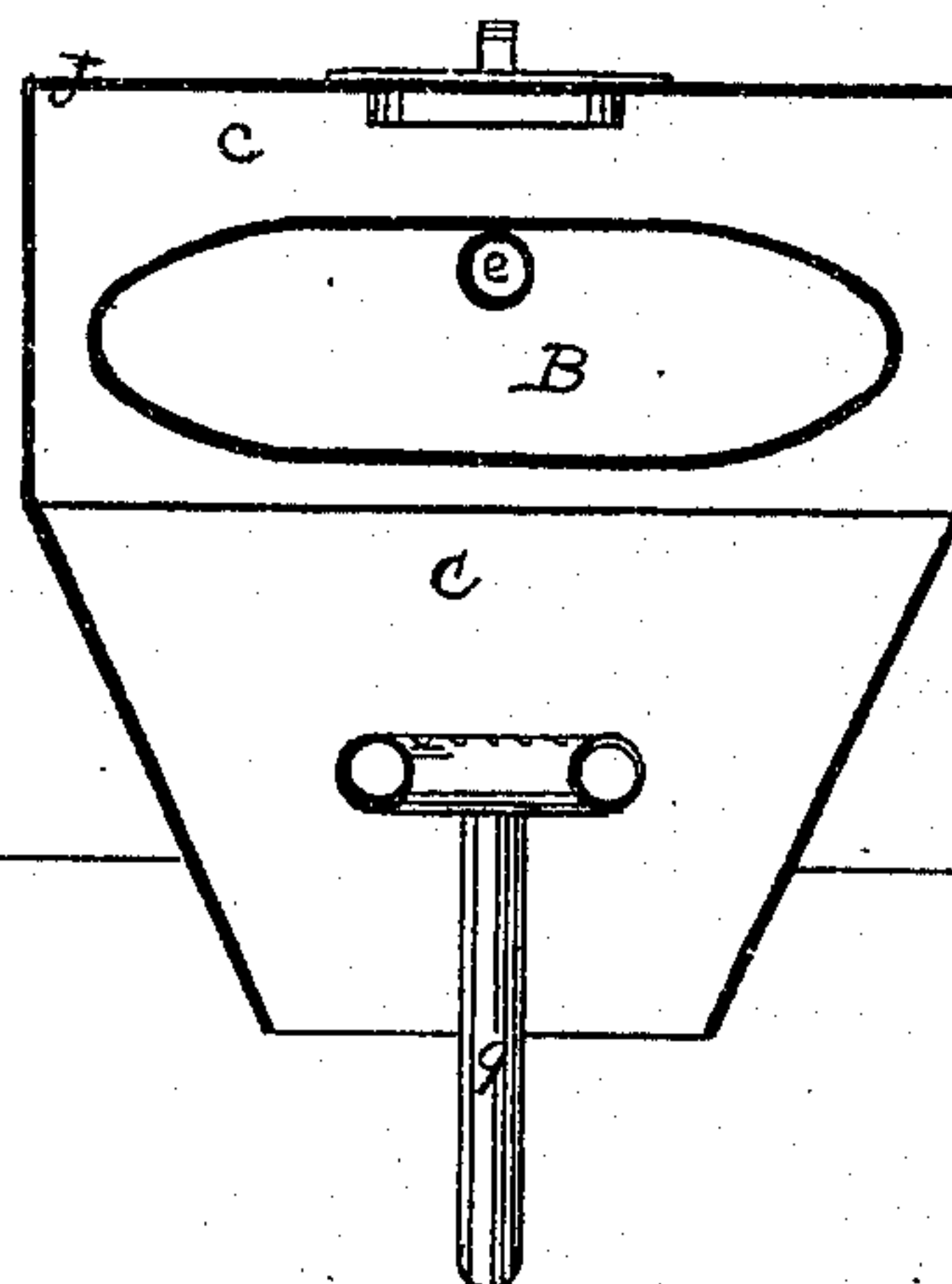


FIG. 2

FIG. 3

72118



John B. Terry
by his attorney
A. Russell

WITNESSES
Mr. Parley
Chas. E. Page, Jr.

United States Patent Office.

JOHN B. TERRY, OF HARTFORD, CONNECTICUT.

Letters Patent No. 72,118, dated December 10, 1867.

IMPROVEMENT IN MANUFACTURING ILLUMINATING-GAS.

The Schedule referred to in these Letters Patent and making part of the same.

TO WHOM IT MAY CONCERN:

Be it known that I, JOHN B. TERRY, of Hartford, in the county of Hartford, and State of Connecticut, have invented certain new and useful Improvements in the Manufacture of Illuminating-Gas; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings.

Many attempts have heretofore been made to introduce into general use, air charged or saturated with the vapor of hydrocarbon fluids, as a substitute for ordinary coal-gas. Such attempts, however, owing to the extreme sensitiveness of fluid hydrocarbons to heat and cold, have met with but little success, for in distributing the hydrocarbon gas through mains and branch pipes to the various buildings or houses where its services are required, pursuing the same method adopted in the distribution of ordinary illuminating-gas, any comparatively slight accession of cold will cause the condensation of the gas in the pipes, which consequently become clogged, and ultimately unfitted for use. It is, therefore, under the present method of manufacturing gas from hydrocarbon fluids, practically impossible to employ such gas in the manner just indicated, and its use is much less general than it would be if the difficulty above named were removed.

The object of my invention is to treat the gas generated from hydrocarbon fluid so as to remove in great measure its liability to condense. I have found that this object can be accomplished by heating the gas or carburetted air, just after it is discharged from the gas-generating apparatus, or before its delivery as an illuminating-gas. The saturated air or gas is passed through a heated retort, in which the air and hydrocarbon are each decomposed, and a mixture of air, carburetted hydrogen, and a small quantity of carbonic acid, passes out from the retort to the burners or is collected in the gasometer. The gas thus produced is ready for use, and is not more liable to condense than ordinary coal-gas, the action of the heat having destroyed the condensing element which it had formerly possessed.

To enable those skilled in the art to understand and use my invention; I will now proceed to describe the manner in which the same is or may be carried into effect, by reference to the accompanying drawings, in which—

Figure 1 is a vertical central section of an apparatus illustrating my invention, and

Figures 2 and 3 are sections of the same on the lines *w x* and *y z* respectively.

The apparatus A, in which the gas is generated, may be of any ordinary or suitable construction. The one in the drawings is provided with a series of partitions, *a*, around which the air which is forced into the vessel through the pipe *b* passes in a zigzag course; the stuffing or packing *c*, of shavings or other suitable material, serving to divide the air, so as to cause it to be impregnated the more readily with the vapor of the fluid. The air, after being fully saturated, passes around the last partition, and is discharged through the pipe *d* into the retort B, where it is to be heated for the purpose above indicated. This retort, which is of any suitable construction, is filled with brick, pumice-stone, coke, or other equivalent porous material, capable of receiving and holding heat, and is heated by any ordinary or suitable means. The material within the retort, while sufficiently porous to admit of the passage of the gas, divides the latter into minute streams, thus causing every portion of the gas to be subjected to the action of the heat which is diffused through such material. The gas, after having passed through the retort, flows out through the pipe *e*, and is conducted to the burners, or to the gasometer, whence it may be distributed through mains and pipes in the usual manner, without being subject to the condensation to which hydrocarbon gases are ordinarily liable.

In order to utilize all the heat of the agent by which the retort is heated, I enclose the retort within a chamber, C, which contains also the burners or other suitable means for imparting the necessary heat to the retort. This chamber is covered by a top plate, *f*, and may be used in lieu of a stove, a series of boiler-holes being formed in the top plate *f*, just as in any ordinary stove. I have found it advantageous to heat the retort in the manner shown in the drawing, a pipe, *g*, being led from the main pipe *e* to a point underneath the retort, where it is provided with one or more burners, which are fed by that portion of the gas which passes from the pipe *e* into the branch *g*.

In order to volatilize the fluid in the generator A, and to maintain it in condition to unite readily with the air, I provide the generator with a jacket, *h*, which partially or wholly encircles it. This jacket is connected with the heating-chamber C by means of a flue, *k*, through which the surplus heat in the chamber passes to the

jacket, and thus effects the heating of the fluid within the generator. By this means such heat may be imparted to the carburetting-fluid as to admit of petroleum being used as well as the lighter hydrocarbons, such as gasoline, &c. The petroleum becoming volatilized by the heat, is rendered quite as effective a carburetting agent as the lighter fluids usually employed.

It is evident that my invention may be modified and varied in many respects, without departing from its principle. While, therefore, describing in illustration of the same, such apparatus as I deem best adapted to give effect to the invention, I do not limit myself to the precise details of construction herein described; but,

What I claim, and desire to secure by Letters Patent, is—

1. The method herein described of heating air charged with hydrocarbon vapor, so as to render it non-condensable previous to its delivery as an illuminating-gas, for the purposes set forth.

2. The employment of a retort or other heating-medium interposed between the carburetter and gas-holder or other gas-delivering or gas-burning device, substantially as and for the purposes set forth.

3. The employment of one or more burners under the retort or vessel, for the purpose of heating the same under the arrangement herein shown and described.

4. The combination, with the carburetting-vessel and intermediate heater, of a jacket under or around the said carburetter, and a flue connecting the jacket with said heater, substantially in the manner and for the purposes set forth.

In testimony whereof, I have signed my name to this specification before two subscribing witnesses.

J. B. TERRY.

Witnesses:

A. POLLOK,

M. BAILEY.