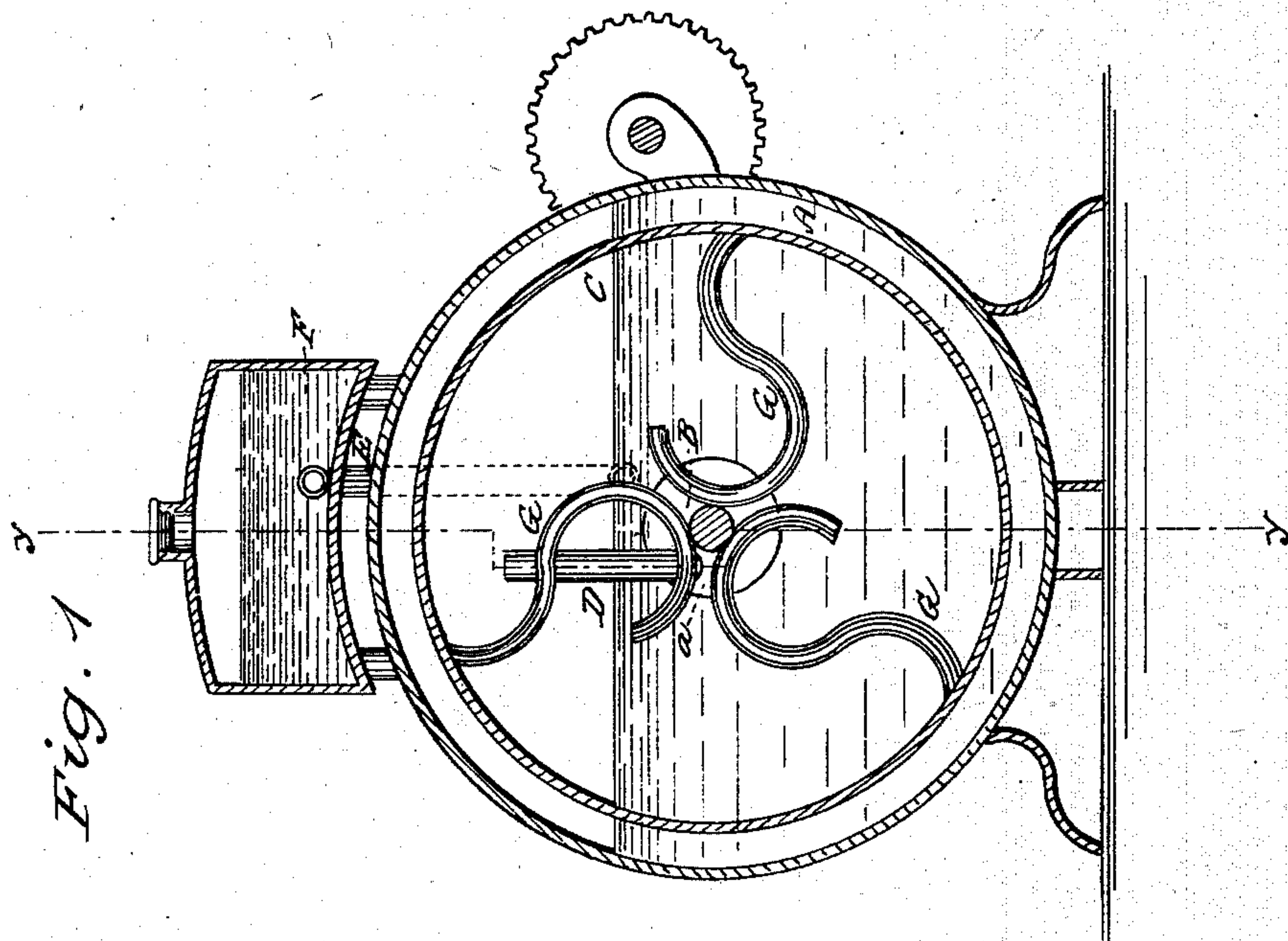
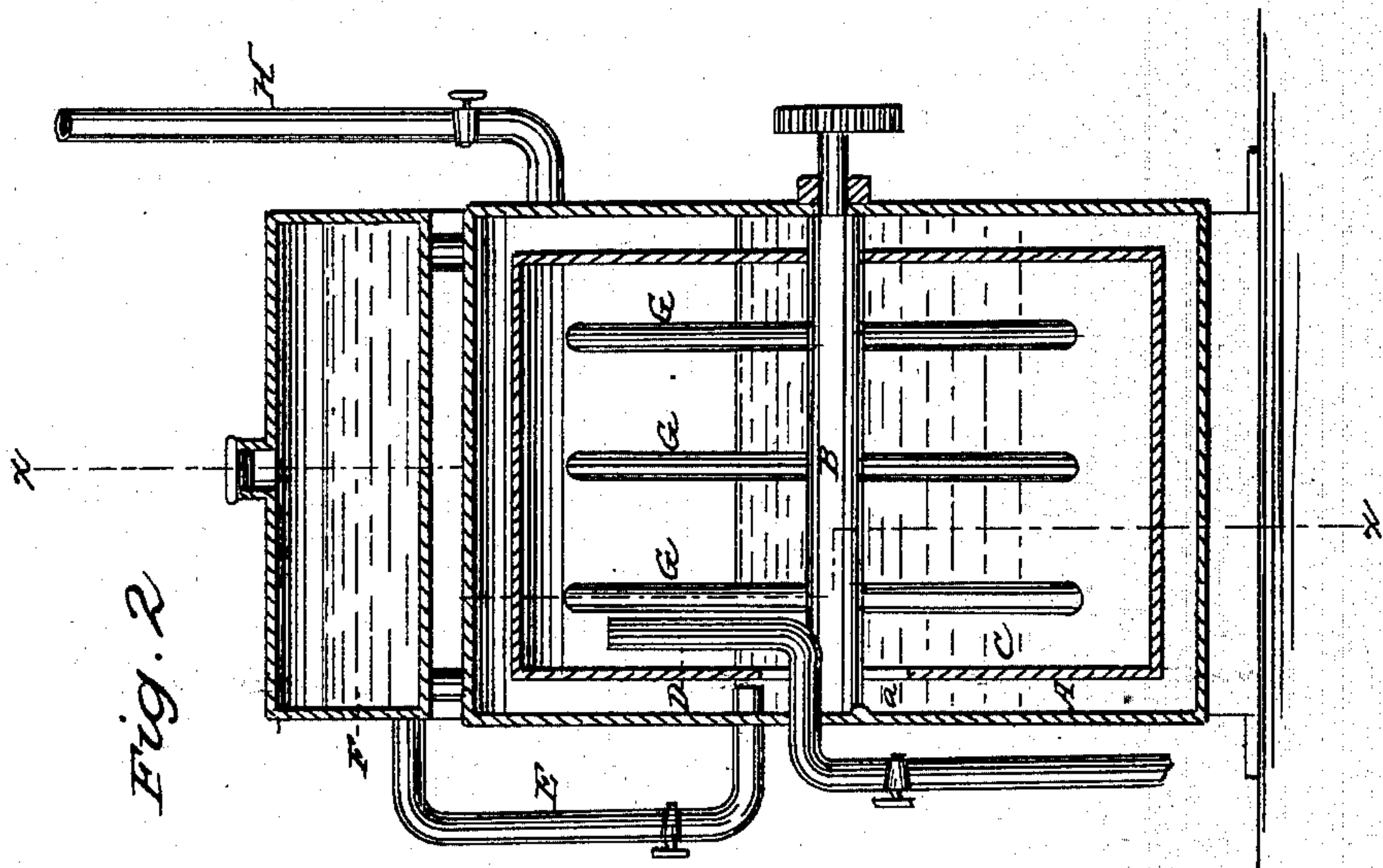


J. F. SPENCE.

Carbureter.

No. 61,887.

Patented Feb. 5. 1867.



Witnesses:
J. H. B. Conington
Wm. Brown

Inventor:
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United States Patent Office.

JAMES F. SPENCE, OF WILLIAMSBURG, NEW YORK, ASSIGNOR TO HIMSELF AND ALFRED PHILIPS, OF NEW YORK CITY.

Letters Patent No. 61,887, dated February 5, 1867.

IMPROVED GAS APPARATUS.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES F. SPENCE, of Williamsburg, in the county of Kings, and State of New York, have invented a new and improved Gas Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a transverse vertical section of this invention, the line *x x*, fig. 2, indicating the plane of section.

Figure 2 is a longitudinal vertical section of the same taken in the plane indicated by the line *y y*, fig. 1. Similar letters of reference indicate like parts.

This invention consists in the arrangement of a series of S-shaped pipes in the interior of a hollow drum, which revolves in the interior of a vessel partially filled with oil, in combination with a suitable oil-supply pipe and with a steam pipe, in such a manner that by the action of the steam the oil or volatile hydrocarbon liquid in the vessel is vaporized, and as the drum revolves a mixture of steam and hydrocarbon vapors is blown out through the S-shaped pipes in the upper space of the outer vessel, whence it is conducted through a suitable pipe to the burners.

A represents a vessel made of sheet metal, or any other suitable material, in cylindrical or any other desirable form or shape. The ends or heads of this vessel form the bearings for a shaft, B, to which a slow revolving motion is imparted by suitable power, and on which is mounted a hollow cylindrical drum, C. The diameter of this drum is such that an annular space is left between its outer surface and the inner surface of the vessel A, and a suitable pipe, D, passes through one of the heads of the vessel A and through a circular opening, *a*, in the centre of one of the heads of the drum C, where it rises up, as clearly shown in the drawing. Through this pipe steam is introduced, and another pipe, E, serves to admit to the vessel A and drum C the requisite supply of hydrocarbon liquid. This pipe extends down from a tank, F, which is closed, air-tight, and it terminates in the vessel A at the desired level of the hydrocarbon liquid. As soon as the level of this liquid closes the mouth of the pipe the supply stops, but when the level sinks below said mouth a fresh supply of hydrocarbon liquid is admitted, and by these means the apparatus is rendered self-supplying. From the shaft B extend a series of S-shaped pipes, G, which are open at both ends, as shown in fig. 1 of the drawings, and a pipe, H, which emanates from the upper part of the vessel A, serves to carry off the gas or mixture of steam and hydrocarbon vapor.

The operation is as follows: As the drum C revolves slowly the inner ends of the S-shaped pipes G are successively raised above the level of the oil in said drum, and the steam which accumulates in the upper part of said drum is permitted to blow through said pipes. The steam being in contact with the surface of the hydrocarbon liquid is saturated with vapors thereof, and in moving through the S shaped pipes it comes in contact with a small body of liquid contained therein, and by vaporization thereof it is surcharged with hydrocarbon vapors, so that a good illuminating mixture is obtained, which, when admitted through the pipe H to suitable burners, will give a brilliant light.

By this apparatus a very cheap light can be produced, which is particularly convenient for manufactories, or other establishments where steam is on hand, and such establishments are thereby enabled to produce their own gas at a comparatively trifling expense. Any condensation taking place in the apparatus or pipes can be drawn off by suitable means.

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

The S-shaped pipes G, in combination with the revolving hollow drum C, vessel A, steam pipe D, and liquid-supply pipe E, all constructed and operating substantially as and for the purpose described.

The above specification of my invention signed by me this 20th day of January, 1866.

JAMES F. SPENCE.

Witnesses:

W. HAUFF,

M. M. LIVINGSTON.