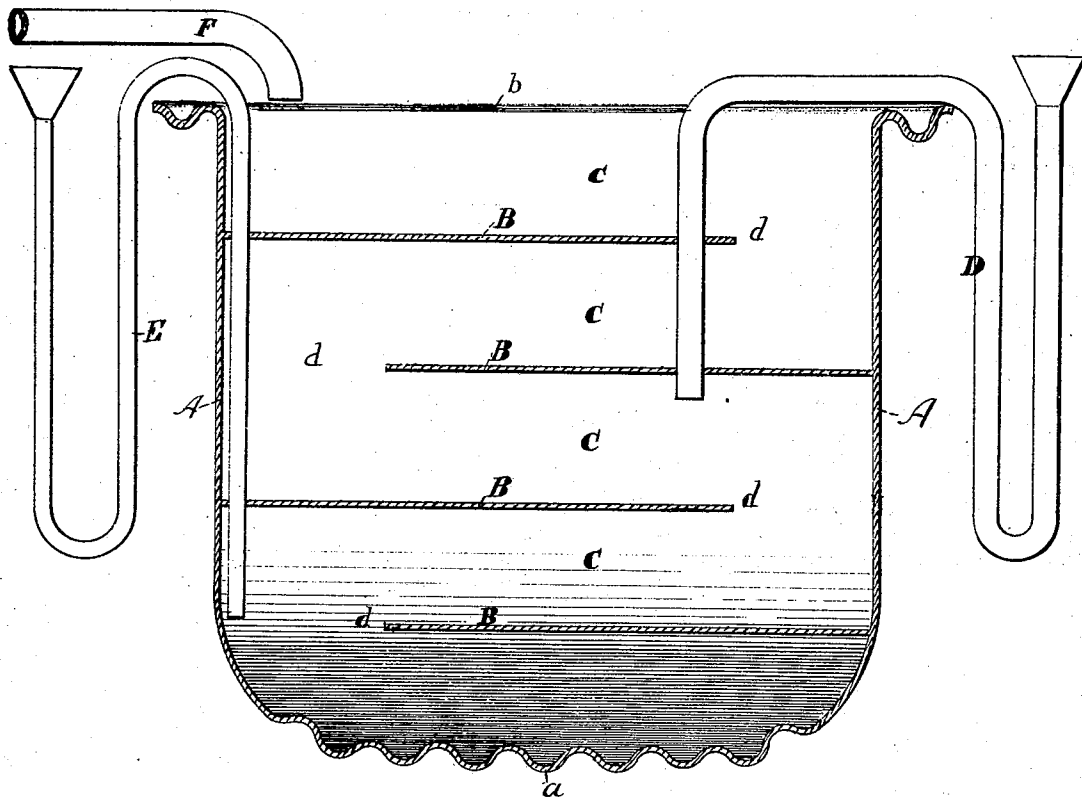


C. J. EAMES.
Portable Gas-Retorts.

No. 152,220.

Patented June 23, 1874.



Witnesses.

V. C. Clayton

Edm. F. Brown,

Inventor.

Charles J. Eames

UNITED STATES PATENT OFFICE.

CHARLES J. EAMES, OF NEW YORK, N. Y., ASSIGNOR TO MARY E. SMITHE,
OF SAME PLACE.

IMPROVEMENT IN PORTABLE GAS-RETORTS.

Specification forming part of Letters Patent No. **152,220**, dated June 23, 1874; application filed
June 15, 1874.

To all whom it may concern:

Be it known that I, CHARLES J. EAMES, of New York, in the county of New York, in the State of New York, have invented a new and Improved Portable Gas-Retort; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in constructing a portable gas-retort provided with a series of diaphragms or plates and a corrugated bottom, in combination with siphons and outlet gas-pipe, as will more fully herein-after appear.

To enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

In the drawing, A is an iron-pot retort, (shown in vertical section,) thoroughly illustrating my invention. *a* is the corrugated bottom, and *b* the top, of the retort sealed in any of the usual ways. B are diaphragms or plates, which are suitably and firmly secured to the sides of the retort, one above the other, as shown in the drawing, each diaphragm having an opening, *d*, through it by means of which the several chambers C are placed in communication with one another. D is the siphon, through which the hydrocarbon liquid is introduced into the retort. E is the siphon, adapted to the conveyance of water into the retort, and F is the eduction-pipe, by means of which the gas is led from the retort.

When the retort is thus constructed the hydrocarbon liquid is caused to flow through siphon D into one of the chambers C, and onto

one of the plates B, which, with the retort A, has been previously heated to a "cherry-red heat" by the furnace to which the retort has been properly secured. The hydrocarbon thence flows over the plate B, and so much of it as has not been vaporized while so flowing passes through the opening *d* onto the plate below, where it is further vaporized, and so much as remains unvaporized flows on down to the corrugated bottom *a* of the retort, where it is finally entirely converted into vapor or gas.

It is obvious that the construction of my improved retort is such as to cause the continuous stream of liquid hydrocarbon to spread out in a wide thin sheet in the intensely-heated chambers C, and so generate gas swiftly and copiously to be conducted from the retort by pipe F. From time to time, as the hydrocarbon liquid becomes (or as it may become) more or less viscid, at various points on the plates B, or as it may contain substances not liquefied, I introduce a small portion of water through siphon E, and the water being vaporized passes up into contact with such viscid masses or substances, renders them more soluble, and thus enables them to be vaporized or made into gas.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In combination with a pot-retort the plates B, as and for the purpose set forth.

CHARLES J. EAMES.

Witnesses:

V. C. CLAYTON,
EDM. F. BROWN.