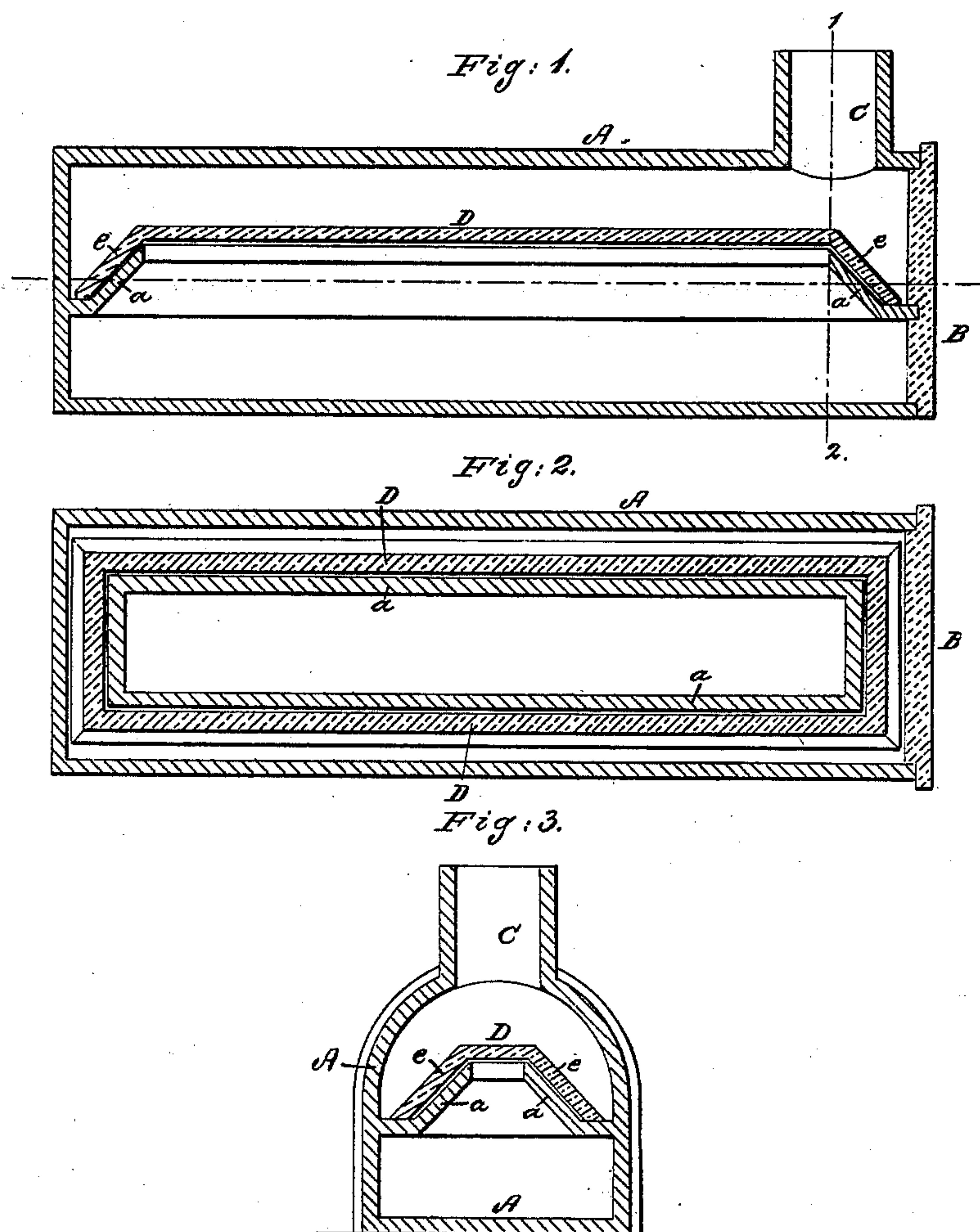


W. H. LAUBACH.

Gas Retort.

No. 22,434.

Patented Dec. 28, 1858.



Witnesses:
Henry Houson
Henry Odium.

Inventor:
W. H. Laubach.

UNITED STATES PATENT OFFICE.

WM. H. LAUBACH, OF PHILADELPHIA, PENNSYLVANIA.

GAS-RETORT.

Specification of Letters Patent No. 22,434, dated December 28, 1858.

To all whom it may concern:

Be it known that I, WILLIAM H. LAUBACH, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Gas-Retorts; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention consists in constructing a gas retort with an upper and a lower chamber, the latter for receiving the charge of gas-producing material and the vapor generated from the same, and the upper chamber for receiving the permanent gas, prior to its discharge from the retort. The division between the two chambers is effected by a plate, so adapted to certain flanches or projections in the interior of the retort, and so weighted, that the amount of vapor admitted into the communication between the two chambers, shall be proportionate to the rapidity with which it is generated, and that the vapor shall pass from the lower chamber in a stream so attenuated and so exposed to red-hot surfaces, as to insure its being converted into permanent gas on entering the upper chamber.

In order to enable others to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawing, which forms a part of this specification, Figure 1 is a longitudinal section of my improved gas retort; Fig. 2, a sectional plan; Fig. 3, a transverse section, on the line 1, 2 (Fig. 1).

Similar letters refer to similar parts throughout the several views.

A is the exterior casing of the retort, which, in this instance, is of a D form, but which may be made of a variety of shapes, without altering the main features of my invention.

B is the detachable cover of the retort, and C the branch pipe for the exit of the gas.

Projecting from the interior of the retort, and along the sides and end of the same, is a flanch *a*, a portion of which is straight and parallel with the top and bottom of the retort, the remaining portion being inclined upward, and terminating in an oblong opening, above which is situated an inverted box

or flanch plate D, of such a size, that, when the edges of its inclined flanches *e* rest on the straight portion of the flanches *a* of the retort, there shall be a space of an eighth of an inch or thereabout between the inclined flanch *a* and that of the plate. The cover plate B is arranged to fit tight against the end of the retort, as well as against that portion of the flanch *a*, which passes transversely across the mouth of the retort. As will now be seen, that the interior of the retort is divided into an upper and lower chamber, between which there is no communication, until the edge of the flanch plate D is elevated above the straight portion of the flanches *a* of the retort, and that, when thus elevated, the communication between the chamber must be through the very narrow passage between the inclined flanches.

The retort, together with its flanch plate, is brought to a red heat, by being mounted on brickwork above a furnace in the usual manner. The lower chamber of the retort having been charged with the gas-producing material, and the cover plate B having been firmly secured to the front of the retort, the material becomes rapidly vaporized, the vapor passing into the narrow space between the inclined flanch *e* of the plate B and the flanch *a* of the retort. By contact with two red hot surfaces so close to each other the vapor immediately becomes permanent gas, the pressure of which, together with that of the constantly increasing vapor below, raises the plate D sufficiently only to allow the permanent gas to escape to the chamber above, from whence it escapes, after the further contact with the hot surface of this chamber, through the exit pipe C. It will now be seen, that the vapor in the lower chamber must, in its attempts to pass to the upper chamber, assume the form of a thin stream, both sides of which must be brought in contact with red hot surfaces, which will have the effect of converting it into permanent gas, before it has passed through the narrow space into the upper chamber.

It must be understood, that the plate D should be weighted to suit the capacity of the retort, so that, when an excessive generation of vapor takes place in the lower chamber, it will yield to the increased pressure of the gas contained therein and in the

space between the flanches; the plate again falling, and diminishing the size of the communication between the two chambers, as the excess of vapor diminishes. It will thus be seen, that the plate accommodates itself to the quantity of vapor generated and, at the same time, prevents any vapor unconverted into permanent gas from passing into the upper chamber.

10 The collection of a thin coat of carbonaceous matter on the inclined flanches, presents no obstruction to the effective operation of the retort, as the plate will continue to be elevated above any deposit to allow sufficient space into which the vapor can pass, prior to being converted into permanent gas. When the carbonaceous matter accumulates to an inconvenient extent, however, it may be readily removed by detach-
 15 ing the cover-plate B, withdrawing the plate D, and cleansing the latter, as well as the flanches *a* in the interior of the retort.

I do not desire to confine myself to the particular form of the retort illustrated, or
 25 to the exact shape of the plate D, inasmuch as both may be considerably modified in

shape, without any deterioration of the result; but

I claim and desire to secure by Letters Patent,

Dividing the retort into an upper and a lower chamber, by means of a movable plate D, said plate being so constructed, and so arranged in respect to flanches or projections in the retort, and being so weighted, that the amount of vapor admitted into the communication between the two chambers, shall be proportionate to the rapidity with which it is generated, and that the vapor shall pass from the lower chamber in a stream so attenuated and so exposed to red hot surfaces, as to insure its being converted into permanent gas on entering the upper chamber, as herein set forth.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

W. H. LAUBACH.

Witnesses:

HENRY HOWSON,

HORACE LEE.