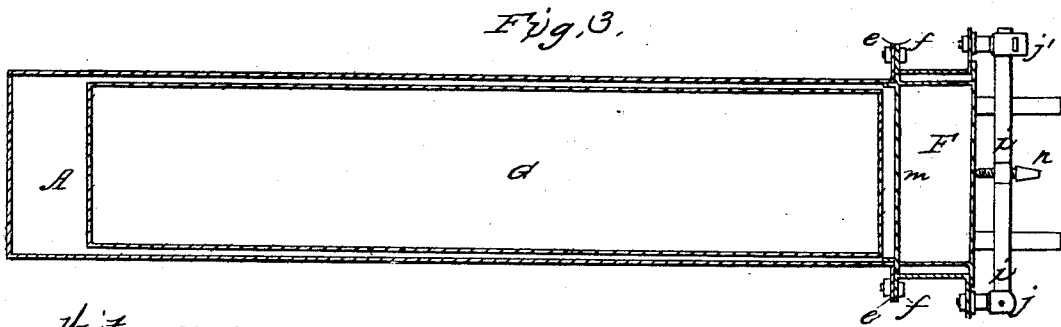
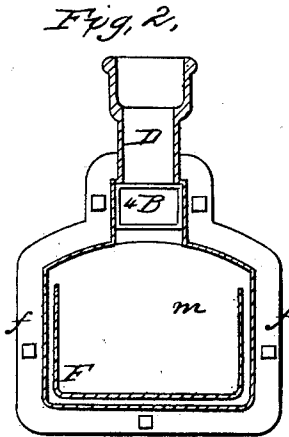
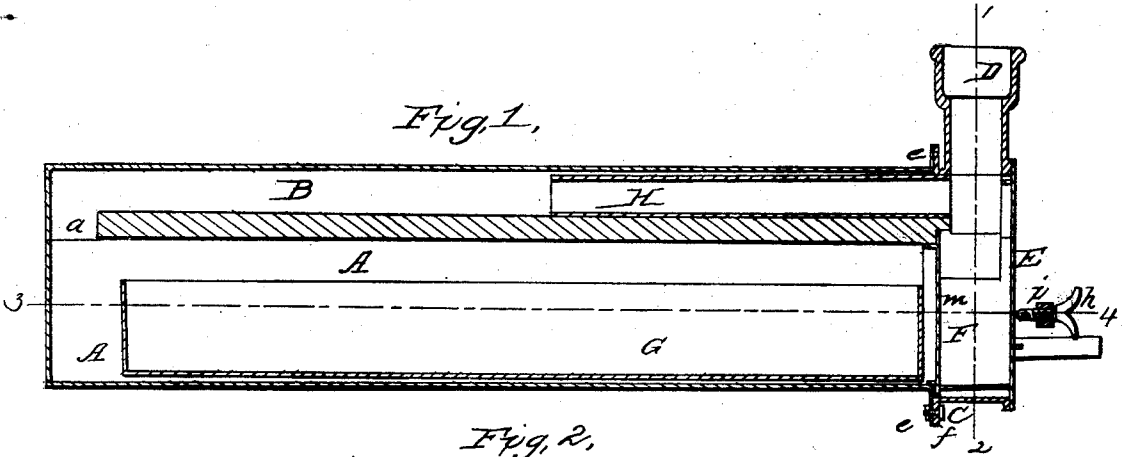


D. L. WEATHERHEAD.

Gas Retort.

No. 23,433.

Patented March 29, 1859.



Witnesses:
 Henry Howson
 Horace Lee

Inventor:
 D. L. Weatherhead

UNITED STATES PATENT OFFICE.

DAVIS L. WEATHERHEAD, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF
AND S. E. SOUTHLAND, OF SAME PLACE.

GAS-RETORT.

Specification of Letters Patent No. 23,433, dated March 29, 1859.

To all whom it may concern:

Be it known that I, DAVIS L. WEATHERHEAD, 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 relates to an improvement in that class of gas retorts which consist of an upper and lower chamber, the latter for the generation of the gas, and the former for the passage of the gas to the exit pipe; and my improvement consists in forming a box on the inside of the cap of the retort, and in the peculiar situation of the said box, in respect to the upper and lower chambers and outlet pipe.

The object of my improvement, which is fully described hereafter, is to obviate the inconvenience arising from the accumulation of gas tar and other refuse matter within the retort.

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, sectional elevation of a gas retort, with my improvements; Fig. 2, a transverse section, on the line 1, 2, Fig. 1; Fig. 3, a sectional plan, on the line 3, 4, Fig. 1.

Similar letters refer to similar parts throughout the several views.

The body of the retort is divided into two chambers, the lower chamber A, and upper chamber B, communicating with each other through an opening *a* at the rear. At the front end of the retort is a flanch *e*, to which is secured the flanch *f* of the head C, on the top of which is the branch D for receiving the end of the pipe, through which the gas generated in the retort passes off to the gasometer.

To the front of the head C of the retort is fitted the cap E, which is retained in its place by a screw *h*, passing through a cross bar *i*, one end of which is hinged to a bracket *j* and the other end temporarily retained by a pin in another bracket *j'*, both brackets being secured to lugs on the front end of the head C of the retort.

On the inside of the cap E of the retort, a reservoir or box F is formed, said box being contained within the head C of the retort, and the back plate *m* of the box fitting against the end of the chamber A, so as to effectually cut off all communication in front between the upper and lower chambers of the retort.

G is the box containing the charge of material for generating gas, and H is a plain tube, arranged to fit freely into the front end of the chamber B.

The retort may be mounted on brick work, in the same manner as ordinary retorts.

The box G with its charge of gas-generating material is deposited in the lower chamber A of the retort, and the cap E firmly secured in its proper position, so as to form a tight joint on the end of the head C, and so that the plate *m* may form another tight joint on the end of the lower chamber A. The gas as it is generated in the lower chamber, passes through the communicating opening *a*, traversing the upper chamber B, through the tube H, and thence through the exit pipe D, to the gasometer.

I am aware that upper chambers have been heretofore used in connection with gas retorts for the passage of the gas from a lower chamber to the pipe which leads to the gasometer. Great inconvenience has hitherto attended the use of this upper chamber or passage, owing to the tar and refuse running down from the exit pipe and accumulating to such an extent as to interrupt the free flow of gas, the refuse becoming gradually so hard as to render the cleansing of the retort almost impossible. It is to remedy this inconvenience, that my improvements have been especially designed. It will be observed, that there is a free communication between the upper chamber H, the branch pipe D, and the box or reservoir F formed on the inside of the cap E, so that the tar which accumulates in the chamber or the exit pipe, finds its way into this box or reservoir.

When a new charge of gas generating material is required, the cap E, with the box and its contents, is disconnected from the retort. At the same time, the tube H, with more or less gas tar adhering to it, is withdrawn. After a new charge has been deposited in the lower chamber, a clean tube H is inserted in the end of the upper cham-

ber, and another cap E, with a box previously cleansed of its gas tar, is attached to the retort, the former box and tube having to undergo the process of cleansing, prior 5 to being again used when another charge is deposited in the lower chamber of the retort.

It will now be seen without further description, that, by the above improvements, the upper chamber may be maintained perfectly free from inconvenient accumulations 10 of gas tar.

I claim and desire to secure by Letters Patent:

The cap E with its box or reservoir F, when arranged, in respect to the lower 15 chamber A, the upper chamber B, and exit pipe D of the retort, substantially as and for the purpose herein set forth.

In testimony whereof, I have signed my name to this specification in the presence of 20 two subscribing witnesses.

DAVIS L. WEATHERHEAD.

Witnesses:

HENRY HOWSON,
HENRY ODIORNE.