

J. HANLON.
Gas-Retorts.

No. 157,820.

Patented Dec. 15, 1874.

FIG 1

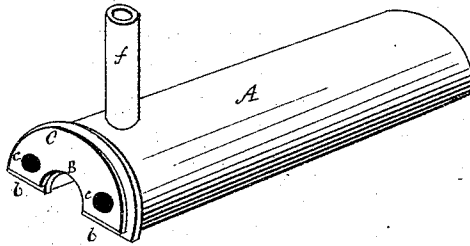


FIG. 2.

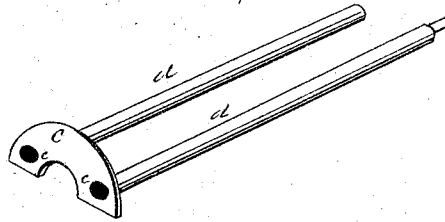


FIG. 3.

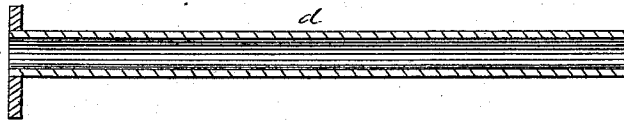


FIG. 4.



WITNESSES.

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IMPROVEMENT IN GAS-RETORTS.

Specification forming part of Letters Patent No. 157,820, dated December 15, 1874; application filed December 7, 1874.

CASE B.

To all whom it may concern:

Be it known that I, JOHN HANLON, of the city, county, and State of New York, have invented certain new and useful Improvements in the Apparatus for the Manufacture of Gas, of which the following is a full, clear, and exact description, reference being made to the accompanying drawings forming a part of this specification, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is the same, with the upper shell removed. Fig. 3 is a longitudinal section of one of the pipes. Fig. 4 represents the twisted diaphragm which forms the spiral grooves through the pipes.

My invention relates to that class of gas apparatus used for the manufacture of carbureted hydrogen gas for illuminating purposes; and it consists in the construction of the retort, as hereinafter described and explained.

To enable others skilled in the art to make and use my invention, I will proceed to describe the particular manner in which I have carried it out.

Heretofore such retorts have been constructed with flat or horizontal bottoms, coming in direct contact with the furnace, and when subjected to a continuous intense heat these bottoms are caused to sag, and thus become seriously injured, if not entirely destroyed, or their repair involves a heavy expenditure of money and a great loss of time. To overcome this serious objection is one of the objects of my invention.

In the drawings, A represents a half-cylindrical retort to be properly secured in a furnace constructed of brick-work or other suitable masonry. The portions *b b* of the bottom of the retort are to rest on the solid masonry in the usual manner of constructing furnaces, while the central portion B is arched or curved to correspond to the upper curve of the retort, as shown in Fig. 1. This central curved portion of the bottom is made to rest on an arch fitting therein, and constructed of fire-brick or other suitable material.

It is evident that a retort thus constructed cannot sag or otherwise yield to the influence of intense heat, while the arched form of the central portion B secures the greatest heat to the retort with the least amount of heating-surface, thus effecting a great economy in fuel.

The front plate C, Fig. 1, is secured to the body of the retort by screws or any convenient means, which will allow it to be readily removed or detached when desired. In this plate are openings *c c*, and to these openings are rigidly secured the open pipes *d d*, extending nearly to the opposite end of the retort, as shown in Fig. 2. These pipes at their rear ends open into the retort, while their front ends open into an ordinary chamber formed in the head of the retort—not shown, as it constitutes no part of my invention.

It is evident that by simply detaching and removing the plate C the pipes *d d* can be withdrawn from the retort, thus securing a ready and easy means for cleaning the retort and pipes. Each of the pipes *d d* is divided into two spiral grooves by means of the twisted diaphragm *e* passing through it and snugly fitting the bore of the pipe. The object of forming these spiral grooves is to cause the gas to travel a longer distance in its passage through and out of the retort, and thus, by keeping it longer in contact with the heat of the retort, secure a more perfect conversion of the hydrocarbon into a fine illuminating-gas.

The operation of my apparatus is as follows: The retort having been properly heated the hydrocarbon liquid is allowed to enter the retort through opening *f* in the top and near the front, and is transformed by the heat into carbureted hydrogen, which, filling the heated retort, only finds an exit through the pipes *d d*, entering these pipes at the rear end of the retort, and, passing through the spiral grooves therein, escapes into the ordinary receptacle provided for the purpose.

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

The retort A, of a carbureter, constructed with the outer horizontal portions *b b*, and having the central portion of the bottom B curved or arched, in combination with the detachable plate C and the open pipes *d d*, provided with the twisted diaphragm *e*, substantially as and for the purpose set forth.

JOHN HANLON.

Witnesses:

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WILL H. MOXON.