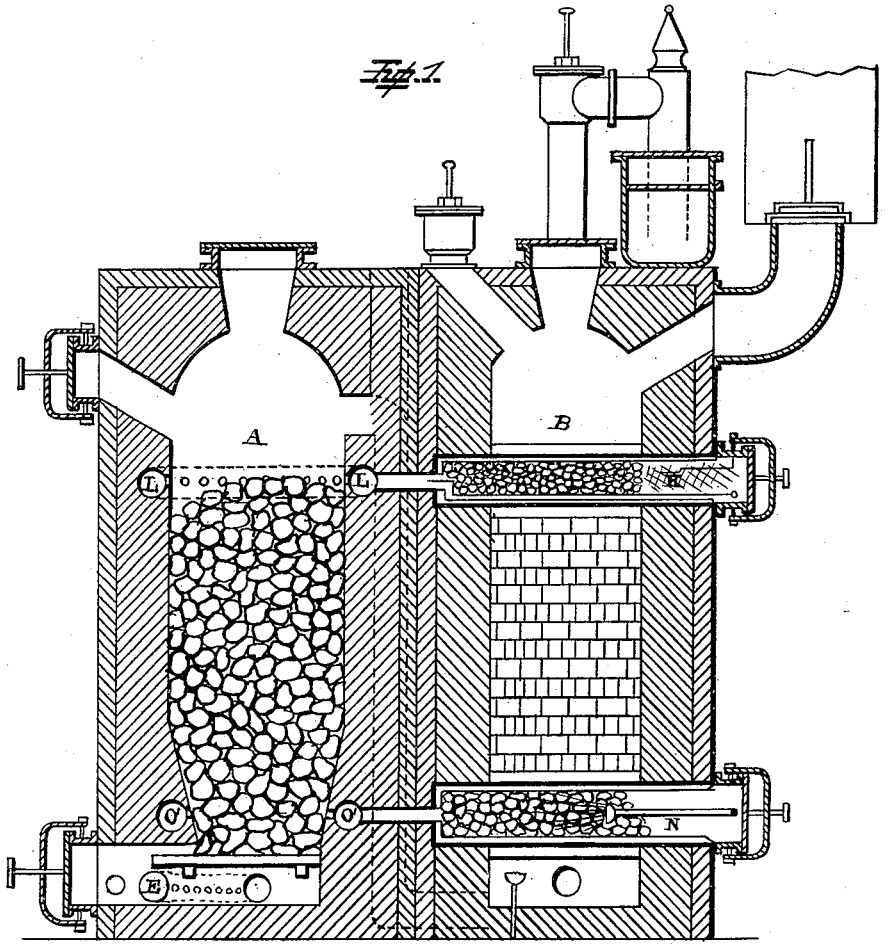
(No Model.) 2 Sheets—Sheet 1.

J. FLANNERY.

HYDROCARBON GAS GENERATOR.

No. 263,499. Patented Aug. 29, 1882.

Fig. 1.



Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

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HYDROCARBON GAS GENERATOR.

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Fig. 2.

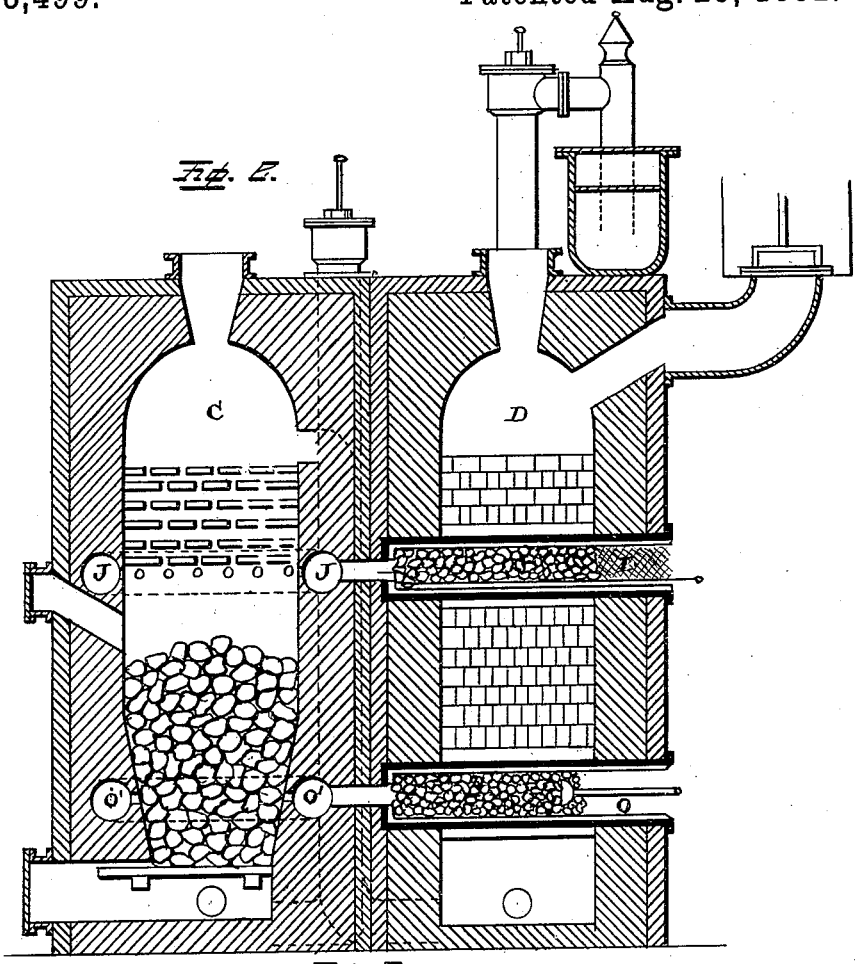
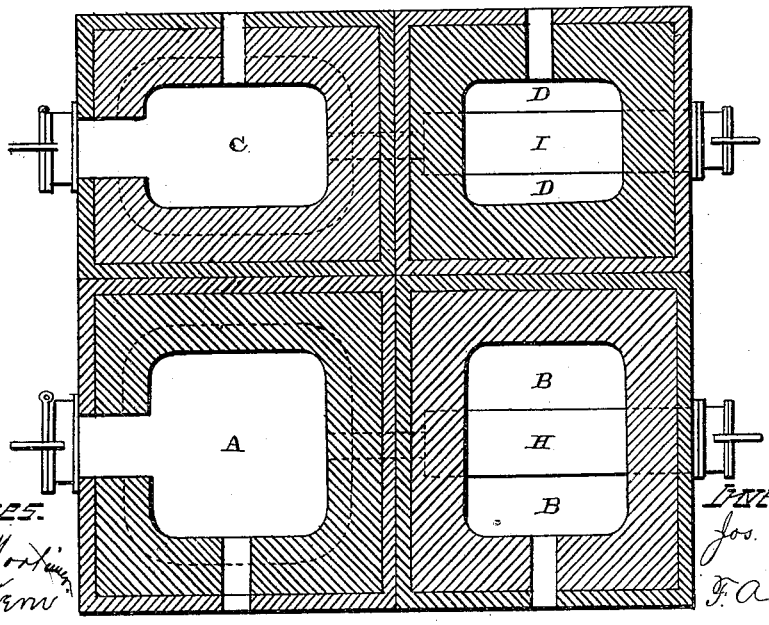


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOSEPH FLANNERY, OF PHILADELPHIA, PENNSYLVANIA.

HYDROCARBON-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 263,499, dated August 29, 1882.

Application filed March 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOS. FLANNERY, of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Hydrocarbon-Gas Generators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in hydrocarbon-gas generators, and is intended as an improvement upon the two patents heretofore granted to me; and it consists in a structure for generating hydrocarbon gas, and which is divided into a number of chambers, in the walls of one or more of the chambers of which are formed ducts or cavities, as will be more fully described hereinafter.

The object of my invention is to provide a means whereby the gas and steam will be evenly fed into the chambers on all sides, and thus brought into more intimate contact with the carbonaceous fires, instead of being fed in at one side only, as has heretofore been the case.

Figure 1 is a vertical section of my generator, taken through the two chambers A B. Fig. 2 is a similar view taken through the two chambers C D. Fig. 3 is a horizontal section taken through all four of the chambers.

As described in both of my former patents, there are four chambers, A B C D, which are built up in the same frame-work, but which are separated from each other in such a manner that the gas cannot escape from one chamber to the other by passing through the walls. In the chamber A is made a fire of any suitable carbonaceous material, and from this chamber the products of imperfect combustion pass into the chamber B through a suitable connecting-pipe, as shown by dotted lines, where they are met by a suitable quantity of atmospheric air. Through the lower portion of this chamber A, and extending horizontally around the four sides, is made the duct or channel E, which is built in the wall, and which is perforated all the way around. The air which supports the combustion in this chamber A passes in through this duct or channel and becomes thoroughly heated before it makes its escape into the ash-pit. The air being heated before it makes its escape causes a much more intense and perfect combustion than will take place where the air is admitted without first being heated, and at the same time the air being uniformly supplied causes a more even distribution than if admitted at a single point only. Passing through the two chambers B and D are the retorts H I, in which the oil is converted into gas, and these retorts discharge the gas into the chambers A and C, as shown. Where the gas is discharged into the retorts upon one side only, as shown in my former patents, there is not that perfect intermixture that is desirable, and for this reason, instead of having the retorts discharge the gas directly into the chambers, I form ducts or cavities J L, which extend horizontally around the chambers A C, and which are perforated at suitable intervals all around the chambers. Through these perforations the gas escapes evenly and constantly into the two chambers in such a manner as to cause the gas to be evenly and perfectly intermingled with the contents of the chambers. Also passing through the chambers B and D are the two retorts N and O, in which the steam is heated, and these retorts, instead of being allowed to discharge directly into the chambers A and C upon one side only, are here made to discharge into the ducts or cavities O′, which are also perforated at suitable intervals all the way around. The steam from these ducts is brought into more intimate contact with the two beds of carbonaceous material, and thus the whole of it is decomposed, instead of having a portion of it pass over as undecomposed.

By means of the perforated ducts which are made in the walls, as here shown, for the purpose of more evenly distributing the steam

and gas, the heat is more perfectly utilized, and a great quantity is made valuable and a greater product obtained in a given time.

Having thus described my invention, I claim—

In a hydrocarbon-gas generator, the combination of the chambers A C, having the perforated ducts or cavities made in their inner walls, with the chambers B D, having the steam and oil retorts passing through them, and connecting with the perforated ducts, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH FLANNERY.

Witnesses:
F. A. LEHMANN,
Z. W. DAVIS.