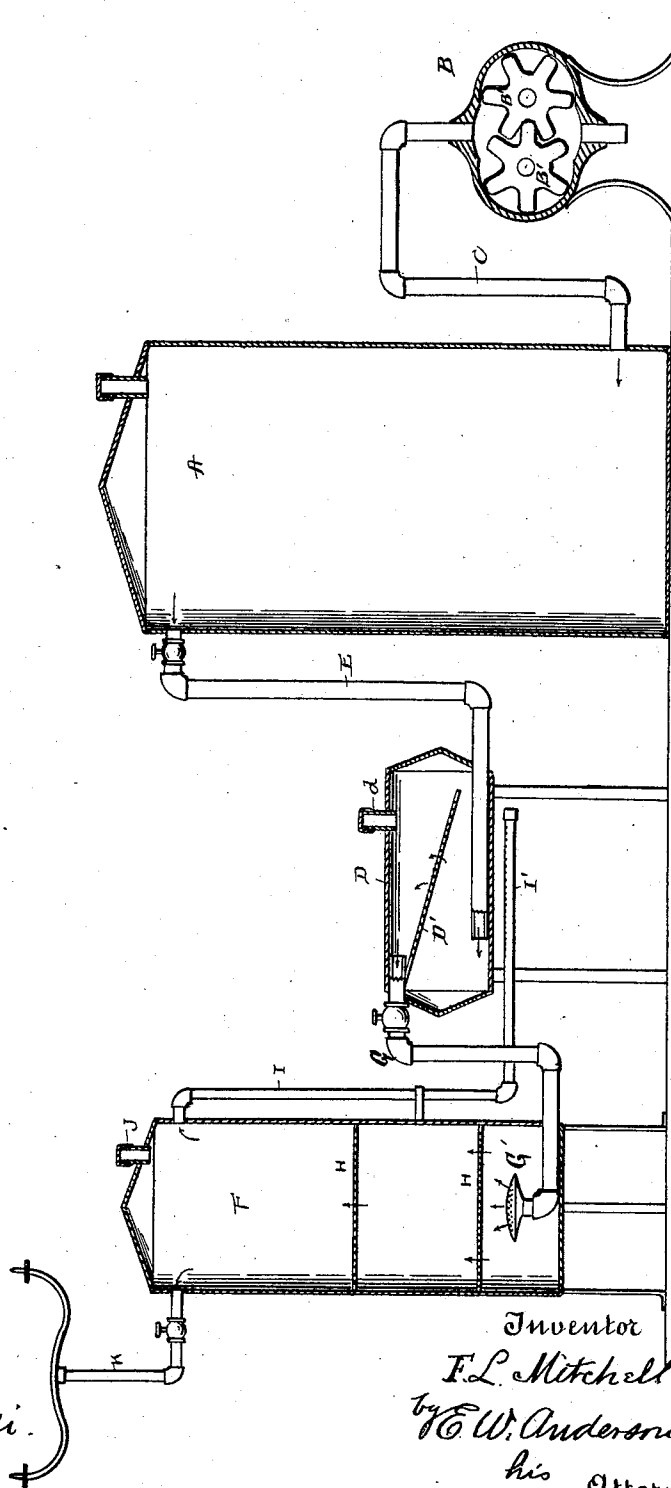


(No Model.)

F. L. MITCHELL,
GAS GENERATING MACHINE.

No. 578,347.

Patented Mar. 9, 1897.



Witnesses
G. M. Anderson
Phil. C. Masi.

Inventor
F. L. Mitchell
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UNITED STATES PATENT OFFICE.

FRANCIS L. MITCHELL, OF DALLAS, TEXAS.

GAS-GENERATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 578,347, dated March 9, 1897.

Application filed April 4, 1896. Serial No. 586,242. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS L. MITCHELL, a citizen of the United States, and a resident of Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Gas-Generating Machines; and I do 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 appertains to make and use the same, reference being had to the accompanying drawing, and to letters of reference marked thereon, which forms a part of this specification.

The figure of the drawing is a representation of the apparatus and is a side elevation, partly in section.

This invention is designed to provide an improved method of and means for generating hydrocarbon vapors for heating and lighting purposes; and it consists in the novel manner in which the process is carried out and in the novel construction and combination of parts comprising the generating apparatus, all substantially as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawing, the letter A designates a large tank or reservoir into which air is forced under pressure by a suitable pump, such as indicated at B. This pump is shown as being of double rotary character with intergeared pistons B', but any other suitable pump may be employed.

C is the pipe which connects the exhaust of the pump with the said tank or reservoir A.

D designates a retort which is supported horizontally adjacent to the tank A and which is designed to be filled or partly filled with a hydrocarbon fluid, such as coal-oil, gasoline, camphene, or benzin, or with a suitable mixture of two or more of these fluids. Inside of this retort is a transverse oblique partition-wall D', which extends from the upper forward end of the tank to a point near its lower rear end and is perforated at its lower portion, as indicated.

E is a pipe which connects the upper portion of the tank A with the lower portion of the retort D, into which it extends for some distance underneath the wall D'.

d is a normally-closed filling-opening for the retort D.

F designates a generating retort and reservoir whose lower portion is connected with the upper forward portion of the retort D by means of a pipe G. Said pipe extends into the reservoir F and terminates in the rose G'.

H H designate perforated horizontal straining and disseminating diaphragms or partitions located one above the other in said reservoir F.

I designates a pipe which leads from the upper portion of said reservoir back underneath the retort D, where it is provided with burner or burners I'. This forms a convenient manner of heating said retort, but it may, however, be heated in any other suitable manner.

J is a normally-closed filling-opening for reservoir F.

K indicates a service-pipe which may lead to any point where the vapor is to be burned. The said reservoir F is designed to be partially filled with gasoline or some other hydrocarbon fluid.

The operation is as follows: Air under pressure passes from the reservoir A to the retort D, and, escaping from the pipe E, it is forced through the heated hydrocarbon to the pipe G and thence to the reservoir F. On account of the extension of the pipe E into the retort F and the provision of the partition-wall D' above such extension it will be observed that the air is pretty thoroughly disseminated throughout the heated hydrocarbon, so that before passing to the reservoir F it is to a large degree impregnated with the heated vapor thereof. As the impregnated air escapes into the reservoir F it undergoes a second impregnation, being disseminated and strained by the perforated partitions H. The resultant vapor, which accumulates under the pressure of the upper portion of this reservoir, is of a superior quality and of great efficiency for heating and lighting purposes. The several pipes are provided with necessary valves.

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

1. In apparatus for generating hydrocarbon vapors, the combination with an air-reservoir, of the retort D, having therein a single transverse, oblique partition-wall D, extending from the upper forward end thereof to a point

near the lower rear end, and perforated for a portion of its length, a pipe extending from the air-reservoir into said retort and to a point underneath the upper end portion of said partition-wall, a second retort and reservoir, a pipe connecting the same with the upper forward portion of the retort D, and means for heating said retort D, substantially as specified.

10 2. Apparatus for generating hydrocarbon vapors comprising an air-reservoir, a force-pump for supplying the same, a heating-retort connected to said reservoir, and having therein an inclined deflecting-partition perforated for a portion of its length and dividing the retort into upper and lower chambers having communication with each other at one end of said partition, and also through the

perforations of the latter, said retort being designed to contain a hydrocarbon fluid, a combined retort and reservoir also designed to contain a hydrocarbon fluid, and having perforated horizontal partition-walls therein, a pipe connecting the lower portion of said retort and reservoir with the heating-retort and a pipe leading from the upper portion of said retort or reservoir back underneath said heating-retort and having burners, substantially as specified.

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

FRANCIS L. MITCHELL.

Witnesses:

W. C. WITCHER,
R. C. PORTER.