

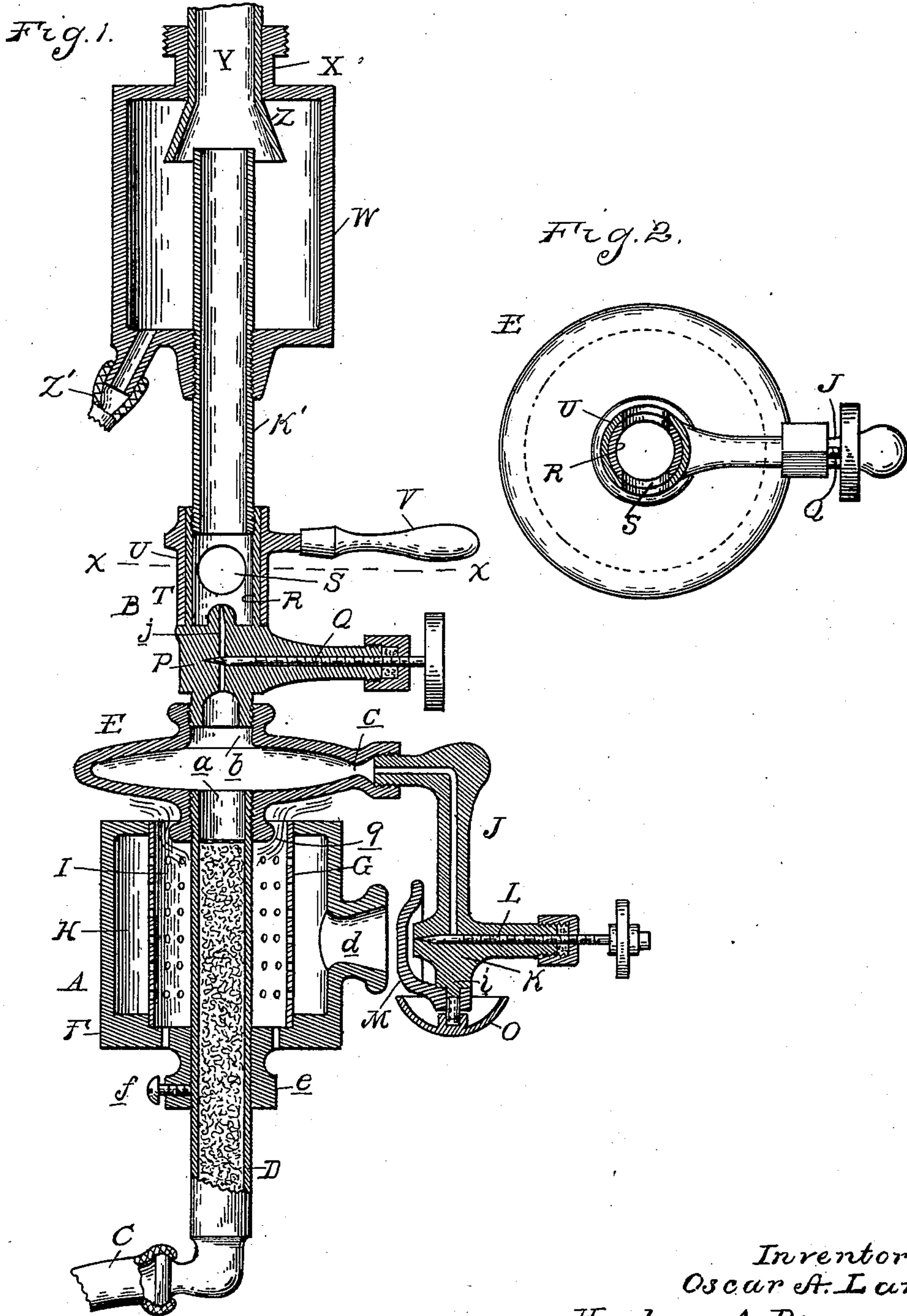
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Patented Mar. 5, 1901.

O. A. LANE & H. A. DAVENPORT.
CARBURETER.

(Application filed Oct. 15, 1900.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

OSCAR ADELBERT LANE AND HUDSON ALBERT DAVENPORT, OF ADRIAN, MICHIGAN, ASSIGNORS OF TWO-THIRDS, BY DIRECT AND MESNE ASSIGNMENTS, TO WILLIAM M. CARLETON, LOUIS A. BROWNE, CHARLES M. EGAN, AND FRED. C. BECK, OF SAME PLACE.

CARBURETER.

SPECIFICATION forming part of Letters Patent No. 669,309, dated March 5, 1901.

Application filed October 15, 1900. Serial No. 33,139. (No model.)

To all whom it may concern:

Be it known that we, OSCAR ADELBERT LANE and HUDSON ALBERT DAVENPORT, citizens of the United States, residing at Adrian, in the county of Lenawee and State of Michigan, have invented certain new and useful Improvements in Gas-Generators, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention has reference to a gas-generating apparatus particularly designed for making gas from hydrocarbon oils; and the essential object of the invention is to produce a gas-generator of this type that will be simple in construction, permitting it to be manufactured at slight cost, and compact in formation, whereby it will occupy a minimum amount of space and will be capable of being readily transported.

With this object in view the invention consists in the novel construction of the gas-generator and in the peculiar arrangement and combination of its various parts, as will be more fully hereinafter described, and shown in the drawings, in which—

Figure 1 is a vertical central section through the generator; and Fig. 2 is a cross-section taken on line *x x*, Fig. 1.

In construction the generator comprises, essentially, a vaporizer, (designated by the reference-letter A,) a mixer B for mixing the vapor with the air to produce combustible gas, a valve-controlled connection between the mixer and the vaporizer, and means for conveying the gas from the mixer to the point of consumption.

The mechanism comprising the vaporizer consists of an inlet or supply pipe C, through which gasolene or other fluid to be used in generating the gas passes to the apparatus from a suitable source of supply.

D represents a filter-pipe, of any preferred construction, communicating with the supply-pipe and forming a continuation of the same, and E is a retort or generator proper mounted upon the upper end of the filter-pipe, as shown. The retort is preferably in the form of a hollow disk provided with inlet and outlet ports

a b, diametrically arranged, and a port *c* at one side thereof. Beneath the retort and arranged upon the filter-pipe for vertical adjustment is the burner F, having an opening *d* at one side thereof and provided at its lower end with a tubular bearing *e*, adapted to be sleeved over the filter-pipe. A set-screw *f* within the bearing secures the burner on its support at the required distance from and beneath the retort.

The burner comprises in its construction a metallic casing preferably cylindrical in configuration, open at its top, as at *g*, and having arranged within an annular foraminous diaphragm G, which divides the interior of the casing into a mixing-chamber H and a combustion-chamber I, as plainly shown in Fig. 1.

J designates a pipe leading from the port *c* in the retort down to the opening *d* in the burner, and K is a nozzle upon the pipe directed toward the opening last referred to and controlled by a needle-valve L.

M is a shield or deflector-plate swiveled upon a stud *i* upon the nozzle K, and O is a drip-cup secured to the stud referred to and arranged immediately beneath the nozzle and shield.

Above the retort E and fixed within the opening *b* is a valve-casing P, provided with a needle-valve Q, controlling the escape of the vapor through the valve-passage *j* into the pipe K'. The valve-casing referred to is provided with a tubular extension R, with which the pipe K' has a threaded engagement, and in the extension is formed one or more air-inlet ports S, as shown. These ports are controlled by a valve T in the form of a sleeve U upon the extension of the valve-casing, the sleeve having corresponding apertures formed therein adapted to register with or to close the apertures in the tubular extension R, as may be desired. The tubular extension of the valve-casing P constitutes the inclosing wall of the mixer B, and the mixing of the vapor with the air is controlled by the valve T referred to through the agency of a suitable handle V.

The reference-letter W designates a condenser mounted upon the pipe K' immediately above the mixer B, the pipe K' extending within the condenser, as shown, to a point in proximity to the condenser-top.

The letter X designates a tubular extension upon the upper part of the condenser, in which is arranged the pipe Y, leading from the condenser to the point of consumption.

Z is a flaring hood depending from the pipe Y within the condenser and extending partly over the pipe K'.

The condensation is conveyed from the condenser by means of a pipe z', which communicates with the lower portion of the condenser, as shown.

In operation the gasolene is conveyed to the retort through the supply and filter pipes, and the needle-valve L is opened to admit a small quantity of the gasolene to the drip-cup O, the gasolene being conveyed to the cup by means of the shield M. The valve referred to is then closed, and the gasolene within the cup is ignited to furnish the initial heat to the generator. The shield M is then turned out of the path of the nozzle K, and the valve is opened to allow the jet to enter the opening d in the mixing-chamber H. The mixed air and vapor passes from the mixing-chamber referred to through the foraminous partition into the combustion-chamber, where it is ignited and burns beneath the retort. This will generate vapor within the retort, which by means of the valve Q is allowed to pass into the mixer B, where it is mixed with air entering through the apertures S and passes onward through the pipes K' and Y to the point of consumption. The condensation passes down from the pipe Y to the flaring hood Z, drops from off the edge of the hood into the interior of the condenser, and is conveyed away from the latter by means of the overflow-pipes Z'.

From the description of the gas-generator it will be readily seen that the parts are so arranged relative to each other that a compact apparatus is formed, and the construction of the apparatus is such that the parts may be readily separated from each other to permit of their being packed in a small space for transportation or storage; also, that by

the use of the peculiar form of retort that we employ the vapor may be quickly generated and the adjustment of the burner to or away from the retort can be effected in a ready and effective manner to produce the desired results. It will also be obvious from the construction of the mechanism that, if desired, the generator-burner may be permitted to burn constantly, which dispenses with the necessity of starting the apparatus each time the gas is to be used; also, that the means we employ for regulating the admission of the air with the vapor may be used for the purpose of preventing the gas in the pipes from returning into the room where the apparatus is located when the discharge of the gas is shut off at the point of consumption.

What we claim as our invention is—

1. In a gas-generator, a vaporizer comprising a retort a burner in operative relation to the retort consisting of a casing having inlet and outlet openings formed therein and a foraminous partition intermediate the openings dividing the interior of the casing into a mixing-chamber into which the inlet-opening leads and a combustion-chamber, means for supplying a fluid to the retort, a nozzle directed toward the inlet-opening in the burner, and a valve-controlled pipe connection between the nozzle and the retort.

2. In a gas-generator, a vaporizer comprising a retort, a burner therefor consisting of a cylindrical casing having an inlet-opening formed in its cylindrical wall, and having one end arranged adjacent to the retort and provided with an opening therein, and an annular foraminous partition within the casing intermediate the openings and dividing the interior of the casing into a mixing-chamber and an open-ended combustion-chamber, means for supplying a fluid to the retort, a nozzle directed toward the inlet-opening in the burner, and a valve-controlled pipe connection between the nozzle and the retort.

In testimony whereof we affix our signatures in presence of two witnesses.

OSCAR ADELBERT LANE.

HUDSON ALBERT DAVENPORT.

Witnesses:

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