

(No Model.)

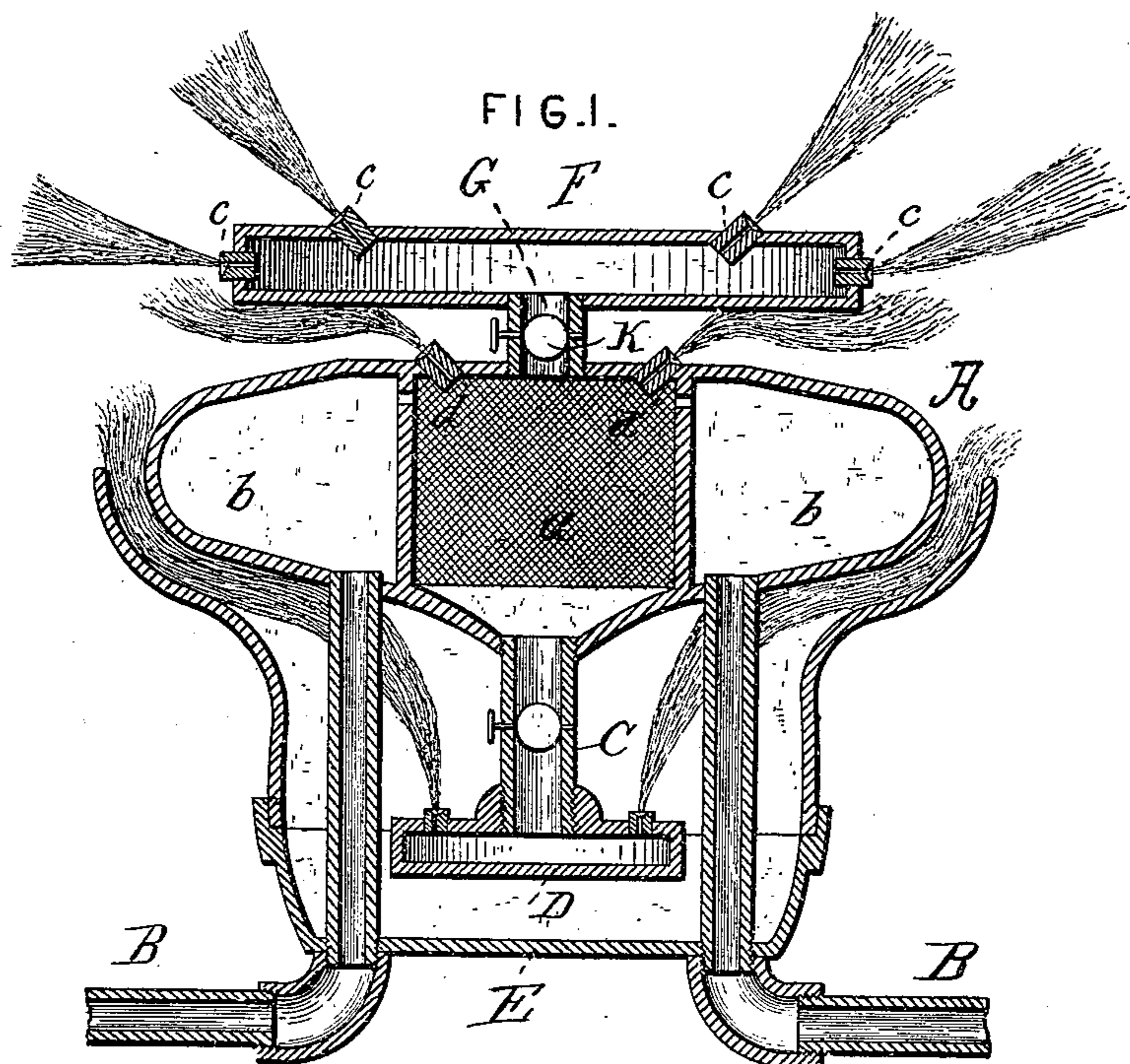
2 Sheets—Sheet 1.

J. B. DEEDS.

HYDROCARBON GENERATOR AND BURNER.

No. 377,019.

Patented Jan. 31, 1888.



ATTEST—  
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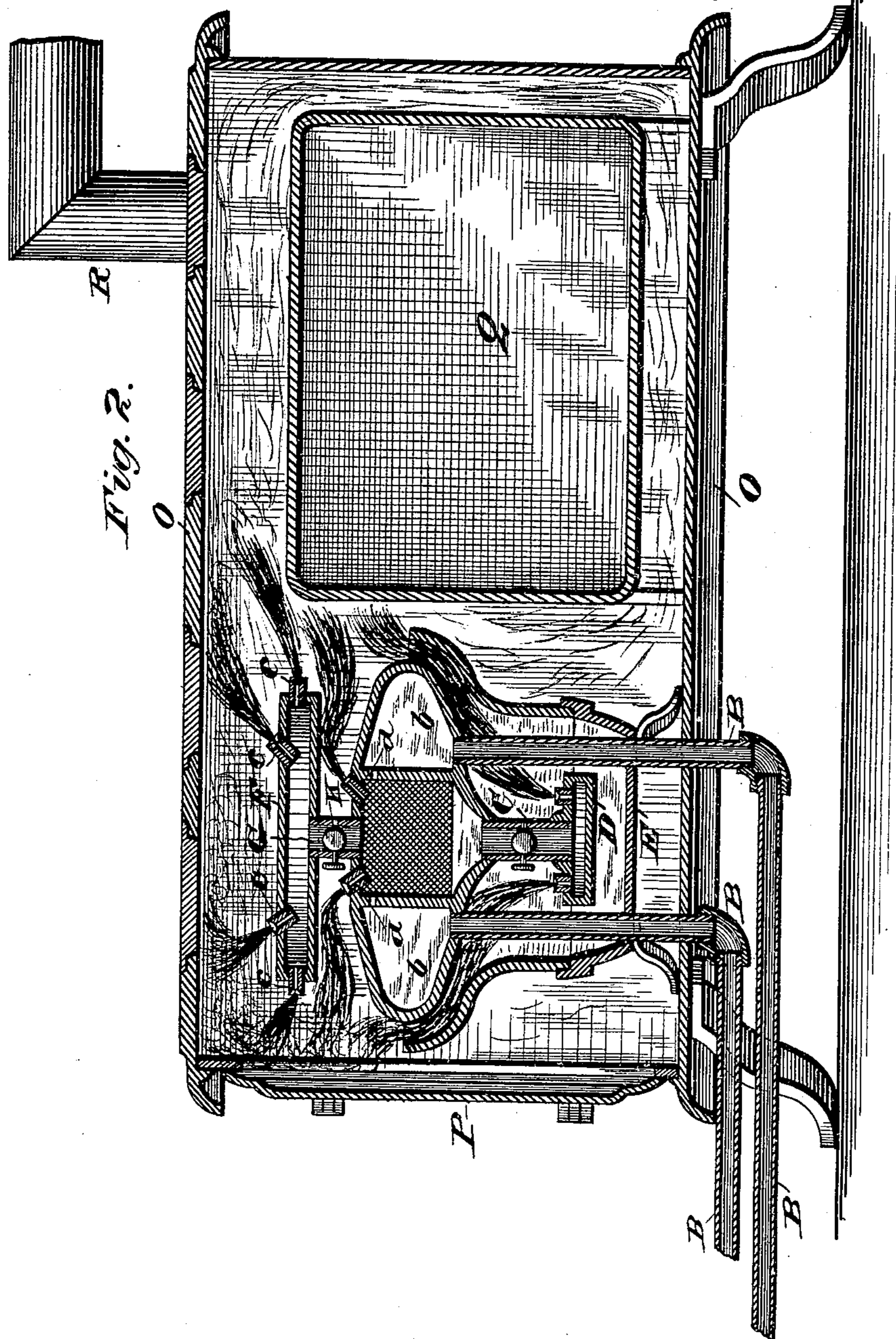
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WITNESSES  
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# UNITED STATES PATENT OFFICE.

JOHN B. DEEDS, OF TERRE HAUTE, INDIANA, ASSIGNOR TO FREDERICK LEE, OF SAME PLACE.

## HYDROCARBON GENERATOR AND BURNER.

SPECIFICATION forming part of Letters Patent No. 377,019, dated January 31, 1888.

Application filed August 9, 1886. Renewed December 16, 1887. Serial No. 258,083. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. DEEDS, a citizen of the United States, residing at Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Hydrocarbon Generators and Burners; 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 appertains to make and use the same.

This invention relates to certain new and useful improvements in hydrocarbon generators and burners; and it consists, substantially, in such arrangement and combinations of parts as will hereinafter be more particularly described, and pointed out in the claim.

In a former patent granted me on the 18th day of May, 1886, No. 342,189, I have set forth certain improvements in this class of inventions, and wherein the same comprises in its organization a retort divided into a central mixing-chamber and two outer vaporizing-chambers, an enveloping shield, inlet-pipes, and a deflector secured in the top of the mixing-chamber. In order to more thoroughly adapt this burner to the uses for which it is designed—that is, for heating and cooking purposes—I have devised the present improvements, and which consist in locating in the top or side of the mixing-chamber a removable perforated distributing-chamber, the connection or communication between the two being provided with a valve for regulating and controlling the degree of heat or flame, the said distributing-chamber also subserving the function of a deflector for the flame issuing from jets in the top of the mixing-chamber.

Before proceeding I would state that I am aware that hydrocarbon mixers and burners have heretofore been provided with perforated distributing-chambers communicating with the interior thereof, and also that in some instances the said distributing-chamber has been made removable; but I am not aware that a hydrocarbon burner and generator of the character herein described has ever been provided with a perforated distributing-chamber having a valve-controlled connection by which the supply of mixed vaporized fluid may be shut

off therefrom, and thus permit of the control of the degree of heat and flame.

The distributing-chamber may be of any well-known shape or configuration; but preferably I employ the form herein represented, by which it also serves the function of a deflector for the jets in the mixing-chamber. It will be understood, also, that the use of any well-known material may be resorted to in the manufacture of these several parts—that is, either cast or wrought metal.

In the accompanying drawings, Figure 1 represents a central vertical sectional view of a hydrocarbon-burner embodying my invention. Fig. 2 represents a sectional view of a cooking-stove, showing my improved burner as applied thereto for the purpose of heating.

Referring to the several parts by letter, A represents the retort, which is divided into a central mixing-chamber, *a*, and two outer vaporizing-chambers, *b b*, the two latter communicating with the former through suitable openings, as shown.

B B represent the two pipes leading to the vaporizing-chambers, for supplying one with water and the other with suitable hydrocarbon oil; and C indicates a valve-controlled pipe leading from the bottom of the mixing-chamber to a suitable burner, D, by which to continuously heat the retort for vaporizing the fluids.

E represents a pan located in the bottom of the retort, in which a suitable quantity of oil is placed and ignited when desired to start the burner.

The top of the mixing-chamber *a* is provided with jets or openings *d*, while about centrally thereof it is provided with an enlarged and threaded opening, in which is removably secured a pipe or tube, G, which connects the distributing-chamber with said mixing-chamber, as shown. The distributing-chamber is provided with any number of jets or openings, *e*, at different parts of its body, while the connecting-tube G is provided with a valve, K, by which the vaporized fluid may be regulated in its supply to the distributor from the mixing-chamber.

From the foregoing description it will be seen that if, by allowing the vapor to pass both

into the mixing and distributing chambers, the heat is too great, then all that is necessary is to simply shut off or reduce the supply to the latter chamber by operating the valve K.

5 It will further be seen that the jets of flame issuing from the top of the mixing-chamber are deflected outwardly on all sides; further, that little or no skill is required in the management, and that a burner embodying my invention is thoroughly adaptable to all the requirements incident to cooking and heating purposes.

10 By referring to Fig. 2 of the drawings it will be seen that the flames issuing from the jets *c* will impinge upon the inner sides of the fire-chamber of the stove *O*, and thus act to heat the same; also will it be seen that some of the flames will be deflected into the space over the oven *Q*, keeping the latter warm for the purpose of baking. The door *P* is for the purpose of enabling the burner to be properly set or placed within the fire-box, after which the supply-pipes are connected. These pipes pass through simple openings provided for them in the bottom of the fire-chamber, and

the burner is supported upon suitable legs, as shown. The fumes are carried off to the flue through the pipe *R* in an obvious manner.

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

In a hydrocarbon burner and generator, the combination, with the retort *A*, constructed of a central mixing-chamber having jets or openings in its top and two outer vaporizing-chambers having each a supply-pipe and communicating with said mixing-chamber, of a distributing-chamber having jets or openings and a pipe connecting it with the mixing-chamber, provided with a regulating-valve, said distributing-chamber being of such dimensions and form as to act as a deflector for the flames issuing from the jets of said mixing-chamber, substantially as described.

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

JOHN B. DEEDS.

Witnesses:

E. EVERETT ELLIS,  
M. A. BALLINGER.