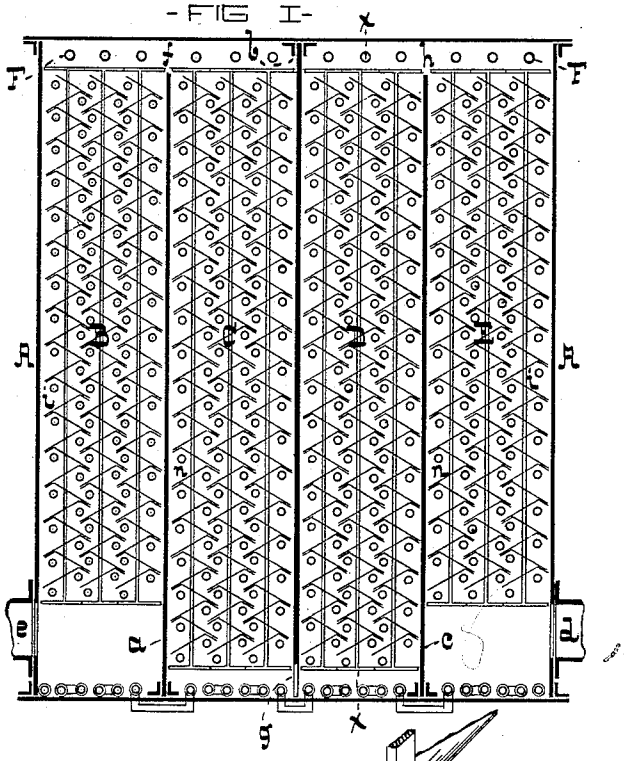
(No Model.)

F. C. KNIESE.

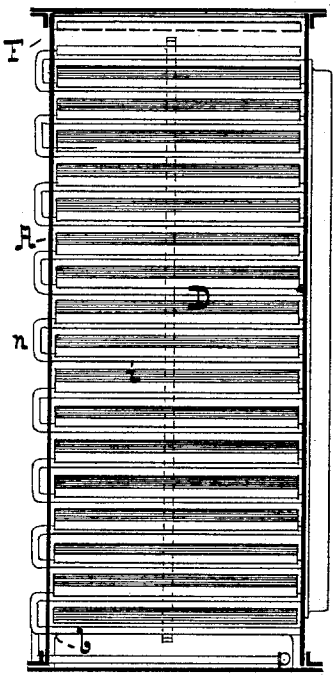
CARBURETOR TO BE USED IN THE MANUFACTURE OF WATER GAS.

No. 348,917. Patented Sept. 7, 1886.

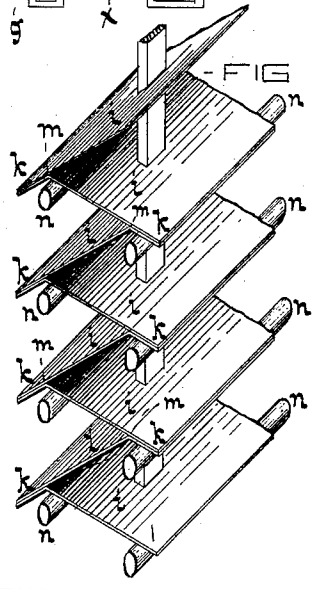
-FIG I-



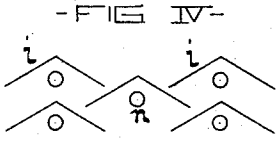
-FIG II-



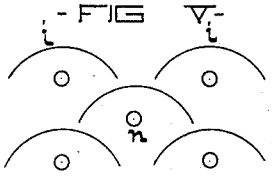
-FIG III-



-FIG IV-



-FIG V-



-WITNESSES-

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Warren Ross

-INVENTOR-

Frederick Charles Kniese,

by Gttr. H. T. Howard,

atty.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

FREDRICK CHARLES KNIESE, OF BALTIMORE, MARYLAND.

CARBURETOR TO BE USED IN THE MANUFACTURE OF WATER-GAS.

SPECIFICATION forming part of Letters Patent No. 348,917, dated September 7, 1886.

Application filed April 8, 1886. Serial No. 198,199. (No model.)

To all whom it may concern:

Be it known that I, FREDRICK CHARLES KNIESE, of the city of Baltimore, and State of Maryland, have invented certain Improvements in Carburetors to be used in the Manufacture of Water-Gas, of which the following is a specification.

This invention relates to certain improvements in an apparatus for carbureting generator or water gas preparatory to the fixing operation, in which the said gas is converted into an illuminating-gas.

In the drawings, forming a part hereof, Figure I is a sectional elevation of the improved carburetor. Fig. II is a section of Fig. I, taken on the dotted line *x x*. Fig. III is a perspective view of a part of the apparatus on an enlarged scale. Figs. IV and V illustrate modifications in the construction and arrangement of certain parts of the apparatus, as hereinafter described.

A is the casing of the carburetor, and *a*, *b*, and *c* are partitions therein. The partitions *a* and *c* extend from the bottom of the casing A to near its top, and the one, *b*, from the top to near the bottom. By this construction the generator-gas which enters at *d* in passing to the outlet-pipe *e* has to take a circuitous passage, as will be readily understood by reference to the drawings. It is not absolutely necessary that the partitions *a*, *b*, and *c* should be shorter than the casing to produce the passages *f*, *g*, and *h*, as these partitions could extend the full length of the casing and be perforated to form the said passages.

The chambers B, C, D, and E, into which the casing is divided by the partitions *a*, *b*, and *c*, have sheet-metal strips *i*, arranged as shelves, which are inclined in opposite directions—that is to say, they are in vertical rows, and each row consists of a series of shelves connected to form a vertical zigzag partition. The adjoining zigzag partitions are placed so as to interlap, as shown, in order that hydrocarbon dropped from the supply-pipe F to the uppermost shelf of each vertical zigzag partition is transferred in descending from one partition to another in drops, and is caused to traverse a large surface of shelving.

To prevent the hydrocarbon from following the zigzag surface of the partitions, instead of dropping from one partition to another, I provide the said partitions with lips *k*, which extend from the angles *m*, as shown in Figs. I and III.

The apparatus is heated by means of steam-pipes *n*, preferably arranged in gangs. These gangs connect with others situated at the bottom of the chambers B, C, D, and E, as shown. I place the steam-pipes *n* directly under the lips *k* or beneath the angles *m*, in order that the heat radiating from them will act directly on the hydrocarbon as the same drops from one shelf to another, and also heat the lips from which the hydrocarbon drips. By this arrangement I am enabled to vaporize nearly or the whole body of hydrocarbon introduced to the apparatus, and before the same reaches the bottom. It will be understood that the vapor of the hydrocarbon is taken up by the generator-gas in its circuitous passage from the inlet *d* to the outlet *e*.

As the extending lips, which prevent a continuous flow of hydrocarbon from the upper to the lower portion to the chambers, are the leading features of construction of the apparatus, I do not wish to be restricted to the construction and arrangement shown in Figs. I and III, as various other arrangements could be employed to effect the same result. In Fig. IV the shelves are Λ-shaped, and arranged to interlap, the steam-pipes being placed below the angles. In Fig. V the shelves are curved, and the steam-pipes placed under them. In all the various arrangements shown there are lips to affect the drip and prevent a continuous flow of the hydrocarbon, and steam-pipes to heat the shelves.

I am aware that overlapping zigzag partitions in carbureting apparatus are old, and that such partitions have been used with projecting lips to insure the drip of the liquid from one section of partition to another; but I am not aware that before my invention such an arrangement of partitions with lips have been provided with steam-pipes placed under the said lips to heat them for the purpose described. I do not therefore claim, broadly, the zigzag partitions in a carburetor; but

What I do claim as my invention is—

1. In an apparatus for carbureting generator-gas, a series of shelves with lips, as described,

combined with steam-pipes to heat the said shelves and pipes to conduct the hydrocarbon to the shelves, substantially as specified.

2. In an apparatus for carbureting generator-gas, a series of shelves connected to form vertical zigzag partitions, combined with steam-pipes arranged parallel with the said shelves and situated directly under the points of intersection or angles, and pipes to conduct the hydrocarbon to the said shelves, substantially as specified.

3. In an apparatus for carbureting generator-gas, a series of shelves connected to form zigzag partitions having extensions or lips leading from the angles where the shelves connect, combined with steam-pipes placed under the said lips and pipes to conduct the hydrocarbon to the said shelves, substantially as and for the purpose specified.

FREDRICK CHARLES KNIESE.

Witnesses:
WM. T. HOWARD,
DANL. FISHER.