

(No Model.)

R. A. BURY & R. M. BIDELMAN.

CARBURETOR.

No. 398,225.

Patented Feb. 19, 1889.

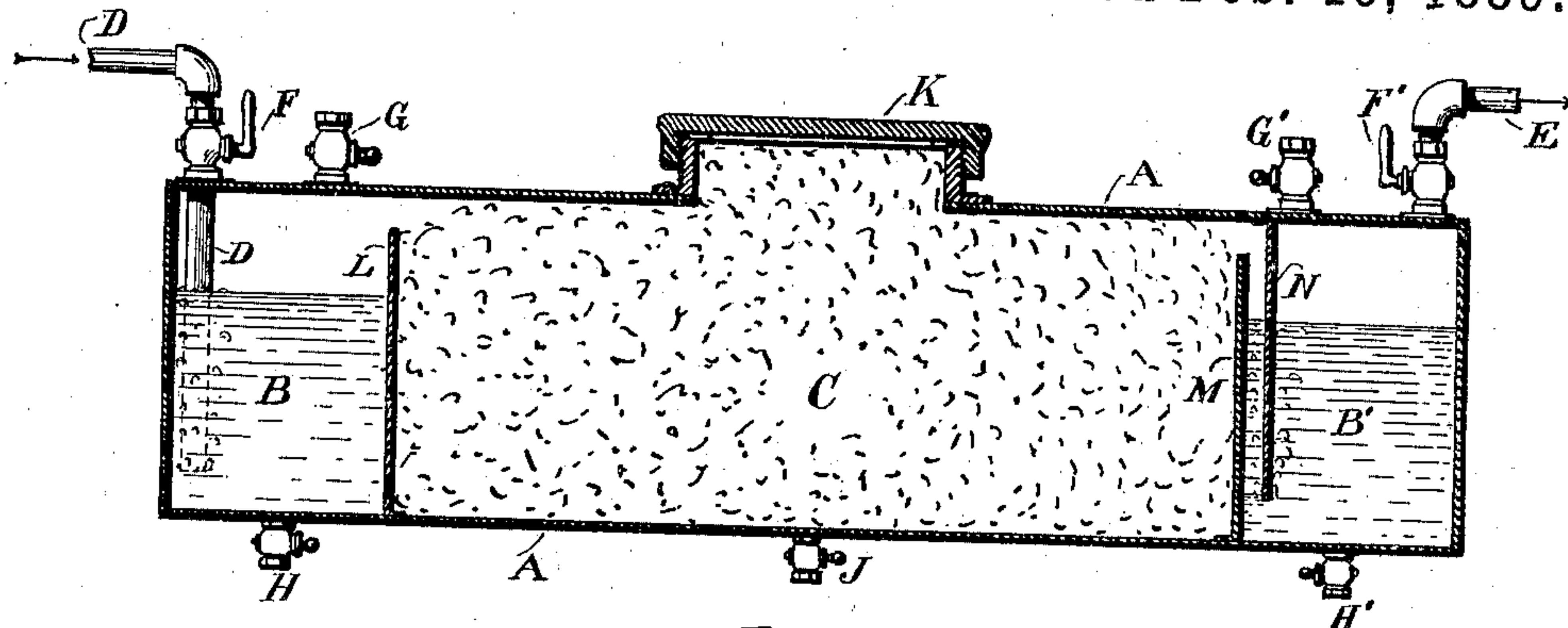


Fig. 1.

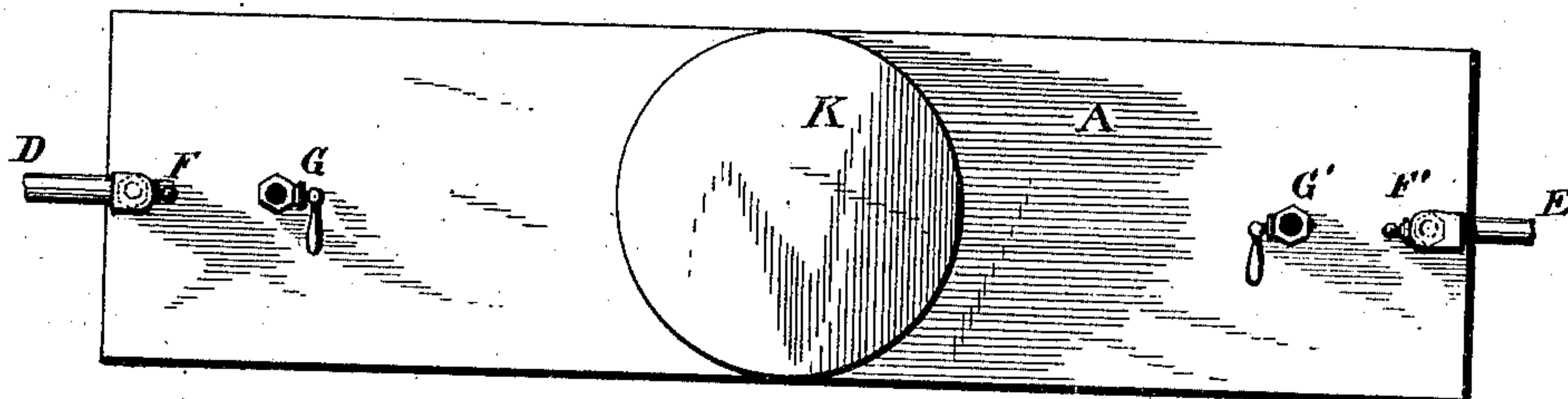


Fig. 2.

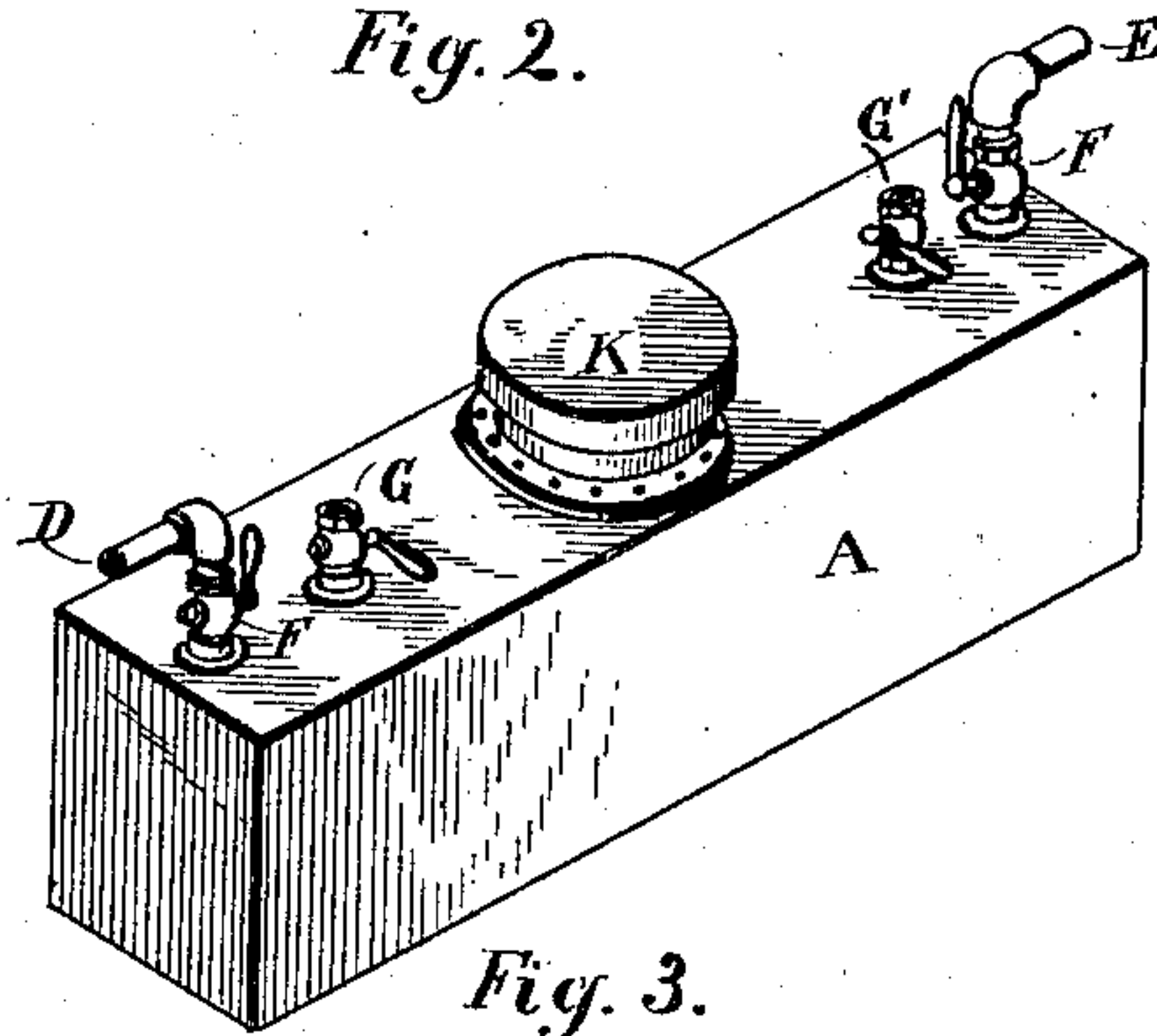


Fig. 3.

Witnesses:

Carroll J. Webster.
Fesley Smith

Inventors.

Richard A. Bury
Robert M. Bidelman
Per Wm. Webster, Atty.

UNITED STATES PATENT OFFICE.

RICHARD AUGUSTUS BURY AND ROBERT MAURICE BIDELMAN, OF ADRIAN,
MICHIGAN.

CARBURETOR.

SPECIFICATION forming part of Letters Patent No. 398,225, dated February 19, 1889.

Application filed April 15, 1887. Serial No. 234,980. (No model.)

To all whom it may concern:

Be it known that we, RICHARD AUGUSTUS BURY and ROBERT MAURICE BIDELMAN, 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 Carburetors; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

Our invention relates to an apparatus for rendering natural gas illuminating, and has for its object to so purify and enrich the so-called "natural gas" now being obtained in large quantities in certain parts of this country, and as yet principally used as a heat-producing agent, that it will be rendered available as an illuminant. We attain these objects by passing the gas through a receptacle so arranged as to not only purge the gas of those properties that are not illuminating but serve to a great extent to deteriorate the quality of the luminiferous gases with which they may happen to be mixed, and then impregnating the gas with hydrocarbons.

In the accompanying drawings, which form a part of this specification, Figure 1 is a longitudinal vertical section. Fig. 2 is a plan, and Fig. 3 an isometrical view.

Similar letters of reference indicate similar parts throughout the views.

As is well known, natural gas is essentially different from that produced from coal, oil, or any other of the liquid hydrocarbons, being deficient in olefiant gas as well as carbon. These properties being the best adapted for the evolution of light during their combustion, it is essential their proportions shall be increased while those gases that deteriorate the luminiferous power of the same shall be removed.

An analysis of natural gas shows the proportion of six-tenths of carbonic-acid gas to one of olefiant gas, with scarcely an appreciable per cent. of carbon. In order to accomplish the desired end, we connect the pipe D, leading from the source of supply, with a

tank or carburetor, and, after passing the gas through a process of purification, pass the same through a chamber filled with charcoal or fire-clay impregnated with any suitable hydrocarbon, by which the quality of hydrocarbon is increased and the gas thereby enriched to a degree to render it a perfect illuminant.

Referring to the drawings, II represents a rectangular gas-tight box divided into compartments B, B', and C by partition-walls L, M, and N, respectively. The compartments B and B' are for the reception of an alkaline solution, the intermediate compartment, C, being filled with charcoal or fire-clay as densely packed as possible, for the double purpose of regulating the flow of the gas as it is forced therethrough by its own pressure, and of carbureting the same during its passage, the charcoal or fire-clay being thoroughly impregnated with any suitable liquid hydrocarbon, these ingredients being introduced through an orifice at the top, which is afterward closed by screw-cap K, the solution being introduced through funnels G and G', provided with an ordinary cock or valve for closing the same. Each compartment is provided with a cock for withdrawing the liquid contained therein, the end compartments, B and B', having cock H and H', respectively, and compartment C being provided with cock J for withdrawing any liquid hydrocarbon that may be precipitated.

In operation cock F is opened, allowing the gas to flow through pipe D to nearly the bottom of compartment B, which being filled with an alkaline solution it is purged of carbonic acid by its affinity with the same. The gas then passes through compartment C, passing through the densely-packed charcoal or fire-clay, which may receive the gas at its initial pressure or at a reduced pressure, as desired. In either event, all fluctuation is obviated by its passage through compartment C, being thoroughly impregnated with hydrocarbon. The gas is carbureted to the desired standard for illuminating purposes and is again subjected to a washing or purifying process by being led between walls M and N and entering compartment B', also filled with an alkaline solution, whereby any deleterious

matters that may by any possibility remain are absorbed, and the gas is ready to pass out through pipe E, (cock F being open,) to be used, as thus enriched and purified, as a perfect illuminant. The flame produced by the gas when thus treated is of great brilliancy and has no radiation of heat therefrom.

In some portions of our country the gas flowing from the earth is colorless as well as odorless, involving great danger from asphyxia by inhalation. By our method of enriching the gas by surcharging the same with the volatile hydrocarbons this danger is obviated, as by their odor, should there be an escape, it will be readily detected before serious injury could result.

We would have it understood that we have described our method and apparatus especially adapted to the use of natural gas. It will be equally well adapted to the purification and enriching of any fluid desired to be used in combustion and deficient in any of the particulars herein recited.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

The herein-described apparatus for purifying, enriching, and controlling the pressure of natural gas and other aeriform fluids, consisting of a rectangular box, A, having compartments B, B', and C, each provided with means for ingress and egress, the parts B B' being filled with an alkaline solution, and the part C filled with a densely-packed absorbent material impregnated with liquid hydrocarbon; two partition-walls dividing the box at one end, one wall rising from the bottom to near the top and the other extending from the top to near the bottom, with a space between them, and a single wall rising from the bottom to near the top dividing it at the other end, as and for the purpose set forth.

In testimony that we claim the foregoing as our own invention we affix our signatures in presence of two witnesses.

RICHARD AUGUSTUS BURY,
ROBERT MAURICE BIDELMAN.

Witnesses:

WILLIAM WEBSTER.
CARROLL J. WEBSTER.