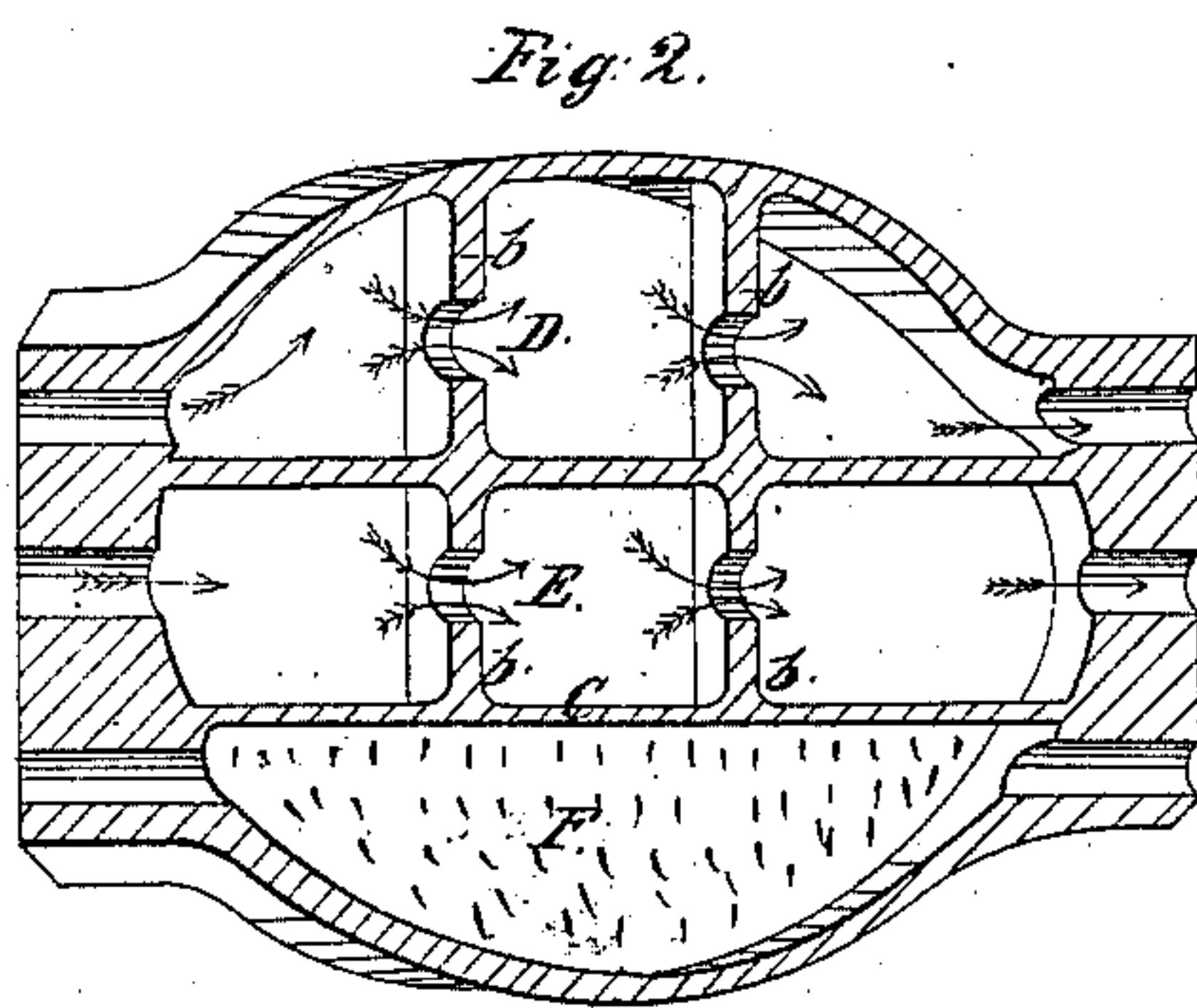
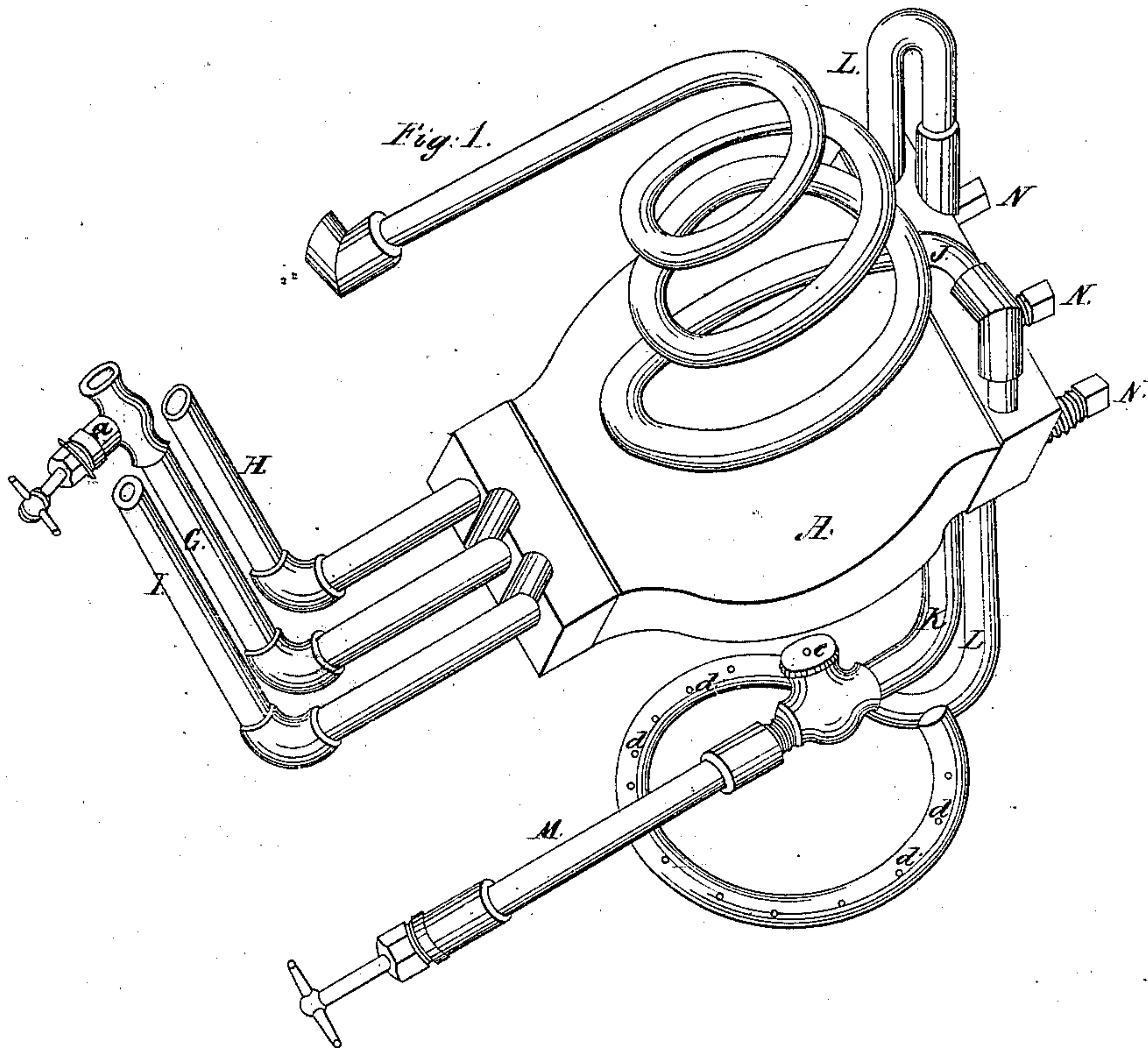


A. J. Griffin,
Burning Hydrocarbon.
N^o 63,881. Patented Apr. 16, 1867.



Witnesses:
Geo. E. Perry,
H. S. Perry

Inventor:
A. J. Griffin

UNITED STATES PATENT OFFICE.

ALVA J. GRIFFIN, OF LOWELL, MASSACHUSETTS.

HYDROCARBON-BURNER.

Specification forming part of Letters Patent No. 63,881, dated April 16, 1867.

To all whom it may concern:

Be it known that I, ALVA J. GRIFFIN, of Lowell, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Aerivapor Hydrocarbon-Burners; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in providing an apparatus to burn the gas created by the vaporization of petroleum or other fluids, its object being for heating and cooking purposes.

It also relates to the generating of gases from any kind of fluids for the purpose of producing light.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 represents a perspective view of my improved apparatus. Fig. 2 represents a view of the body of the gas-generator and heater, the top being removed so as to show the internal structure.

In the different figures the same letters refer to identical parts.

This invention is an improvement over my Patent No. 56,143, dated July 3, 1866.

A is a strong case, made of the strongest metal or material, hollow, and having two internal longitudinal ribs or partitions, B and C, these ribs or partitions forming three entire distinct divisions or chambers, D, E, and F. The chambers D and E are further subdivided into three separate parts.

G is an iron pipe leading from a reservoir supplied with petroleum, naphtha, or other equivalent combustible fluid, such fluid being regulated in its supply by a suitable stop-cock, *a*. A similar pipe, H, supplies, in like manner, water from a reservoir, and in like manner is regulated by a similar stop-cock. A third pipe, I, corresponding with the others, and regulated by a similar stop-cock, supplies the chamber F with any kind of fluid suitable to practically generate gas.

Across the chambers D and E lateral ribs *b b b b* connect to the rib C, across the rib B, to the rim. These ribs *b b b b* connect and join with the upper and lower portions of the case

A. Through the center of each rib *b b b b* a hole or orifice is made. By this means or arrangement the fluids entering through the pipes G and H are compelled and forced to pass through the same, as seen in Fig. 2, indicated by the arrows, and are thus distributed over the heated surface of the bottom.

The chamber or retort F is constructed plain, without ribs, which I fill with any material or substance, whether coal, coke, or iron chips, &c., as indicated in Fig. 2, that will assist to decompose any kind of fluid into illuminating-gases. From this chamber F, I connect a pipe, J, of any shape, either straight or coiled, as may be desired. This pipe J serves not only to conduct the gas to the gasometer, but also as a purifier and refiner, to a certain extent.

K and L are pipes leading from the chambers D and E, by which the gas and heated vapor are conveyed under the apparatus A for consumption. The gas generated from the petroleum, or its equivalent combustible fluid, passing through the pipe K, is led immediately and directly under the center of the apparatus A, where it is discharged through the burner *c*, and is controlled by the regulating-valve M at its end. This valve M serves also to extinguish the light from the burner *c*, and also prevents the escape of gas left in the pipe G and chamber E after the supply is stopped by the cock *a*, which gas, if escaped, would produce unwholesome and unpleasant odors.

The pipe L is brought under the lower extremity of the pipe K, and concludes or terminates with a coil, as shown, which is parallel with the bottom of the apparatus A, and is perforated with orifices *d d*.

N N N N are opening and closing apertures in the end of chambers, left for convenience for opening, cleaning out, and closing the same.

In operating with this apparatus, the combustible fluid is introduced so as to cover the bottom of the chamber E, appropriated or set apart for it, and alcohol or other flame is applied below the apparatus, by which the vaporization of the petroleum or other fluid is accomplished, and the gas thus generated, passing through the pipe K and burner *c*, is set on fire, and serves thereafter for the continued and constant operation of the apparatus. When the chambers D and F have become highly

heated by the action of this flame against the lower surface, the stop-cocks are turned, the water and fluid are permitted to pass in a thin sheet over the surface of their respective compartments, and are there converted instantly into highly-rarefied steam and gas; and the steam or vapor passing through the pipe L, and being discharged through the orifices *d d*, and mingling with the flame from the gas formed by the petroleum, is resolved and converted into its gaseous element, in which form it burns with an intense heat.

The gas from the chamber F passes into the pipe J, where it is partially purified, and conveyed into the gasometer.

This apparatus can be practically adapted to a stove for cooking and heating purposes, and also for producing heat to generate steam for power or heating purposes; also, is of great importance for the production of illuminating-gas.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Constructing the chambers D and E with longitudinal ribs B and C and lateral ribs *b b*, perforated with orifices, substantially in the manner and for the purpose set forth.

2. The gas chamber or retort F, when combined with the chambers D and E, substantially in the manner and for the purpose set forth.

3. The coil-pipe J, or its equivalent, when arranged in combination with the gas-retort F and chambers D and E, substantially as and for the purposes set forth.

A. J. GRIFFIN.

Witnesses:

GEO. E. PEVEY,
F. S. PEVEY.