

C. HOLLAND.
Hydrocarbon Vapor-Generator and Burner.
No. 203,829. Patented May 21, 1878.

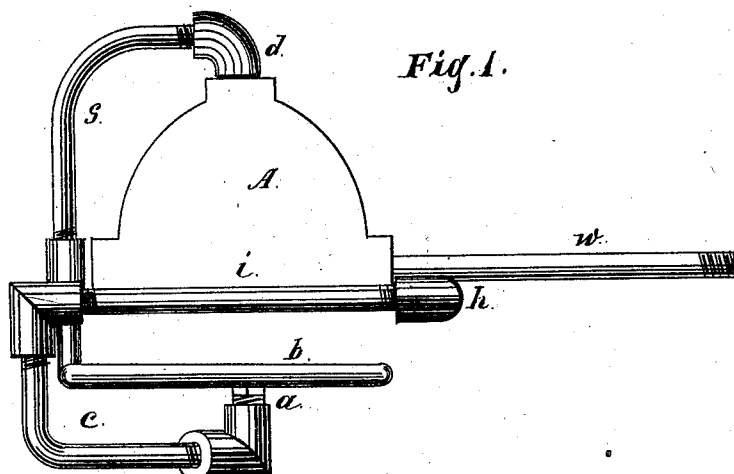


Fig. 1.

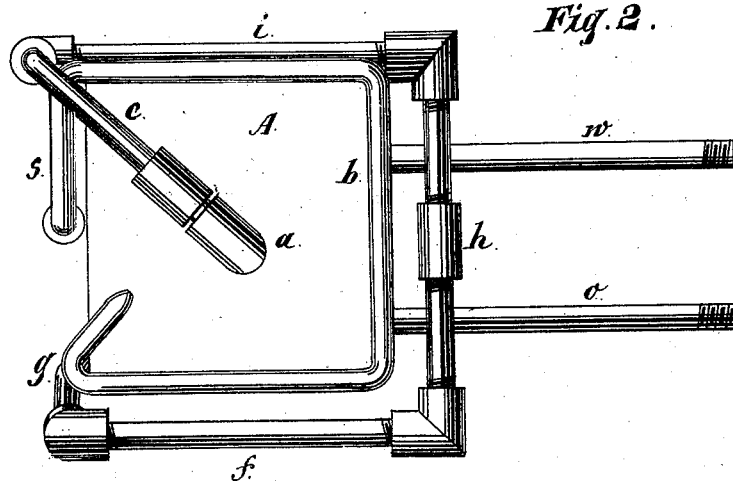


Fig. 2.

Witnesses:

L L Bond
O W Bond

Inventor:

Charles Holland

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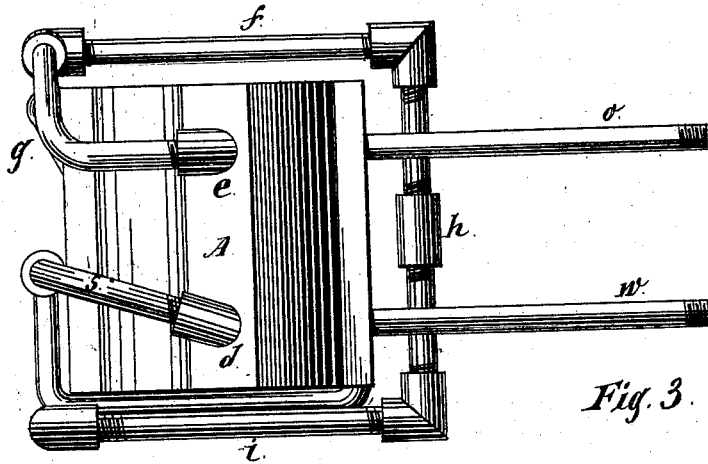


Fig. 3.

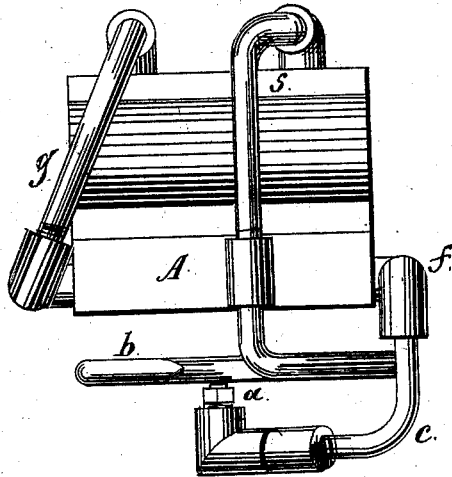


Fig. 4.

Witnesses:

L L Bond
O B Bond

Inventor:

Charles Holland

UNITED STATES PATENT OFFICE.

CHARLES HOLLAND, OF CHICAGO, ILLINOIS, ASSIGNOR TO PARK HOLLAND,
OF SAME PLACE.

IMPROVEMENT IN HYDROCARBON-VAPOR GENERATOR AND BURNER.

Specification forming part of Letters Patent No. 203,829, dated May 21, 1878; application filed
April 3, 1878.

To all whom it may concern:

Be it known that I, CHARLES HOLLAND, of the city of Chicago, Cook county, State of Illinois, have invented new and useful Improvements in Hydrocarbon-Vapor Generator and Burner, of which the following is a full description, reference being had to the accompanying drawing, in which—

Figure 1 is a side elevation; Fig. 2, a bottom view; Fig. 3, a top or plan view, and Fig. 4 an end view.

The object of this invention is to improve the construction and operation of hydrocarbon or oxyhydrocarbon burners which, in their combinations, generate the gases consumed; and its nature consists in carrying the oil-gas pipe around the retort for the purpose of more completely heating the oil gas or vapor into a fixed or permanent gas, which improvement may be used in combination with any retort designed to produce fixed gases.

In the drawings, A represents the retort, which is made in the form shown, and its interior is divided into two separate compartments similar to those shown in a patent granted to me May 22, 1877, No. 191,144; *a*, the burner or jet; *b*, a perforated pipe or coil, from which the water-gases issue; *d*, connection of the steam-pipe with the retort; *e*, connection of the gas-pipe with the retort; *f g h i c*, gas-pipe; *o*, oil-pipe; *w*, water-pipe; and *s*, steam-pipe.

The oil and water pipes *o w* are connected by suitable extensions with oil and water reservoirs located either within or without the building. In such places as have regular water-works the pipe *w* may be connected with a hydrant or service-pipe. These pipes *o w* may be filled to the full length shown, or for a portion of their length, with rolled-wire cloth or wire-gauze, to limit and regulate the flow of oil or water, or both, into the compart-

ments of the retort. These pipes are let into the retort at or near its base, each into its respective compartment, where, by reason of the high heat, the oil is vaporized and the vapor converted into a fixed or permanent gas, and the water is vaporized or converted into steam, and the steam is converted into the superheated or gaseous form, which operation is assisted in both cases by the pipes between the retort and the exits.

In the form here shown the vapor or gas from the oil passes out of the retort through the pipe *g*, thence around the retort through the pipe or pipes *f h i*, and under through the pipe *c* to the jet or burner *a*. The water-vapor passes from the retort through the pipe *s*, and around under the border of the retort through the pipe *b*, as shown at Fig. 2, nearly or quite surrounding the oil-gas or initial flame. The top of the pipe *b* is provided with a row of perforations, made very small, and as nearly uniform in size and space between them as is practicable. The water-gas issues through these holes into the spreading flame of the oil-gas, and, mingling therewith, is consumed, adding greatly to the flame and heat.

In starting the operation a heater or starter, such as is shown in another application of this date, or other suitable starter, may be used. The pipe *f, g, h, i*, and *c* may be made in sections, as shown, or of a single bent pipe.

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

The combination of the oil-gas pipe *g f h i*, extending around the retort A, and burner *a* with the steam-pipes *s b*, constructed and combined substantially as specified.

CHARLES HOLLAND.

Witnesses:

L. L. BOND,
O. W. BOND.