

C. HOLLAND.
 Hydrocarbon Vapor Generator and Burner, and
 Gas-Generator.

No. 203,830.

Patented May 21, 1878.

Fig. 1.

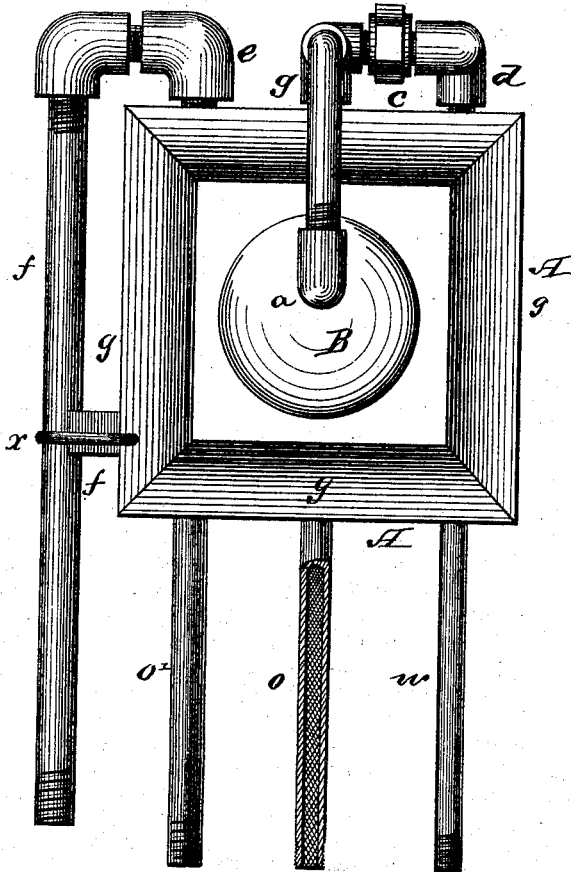


Fig. 2.

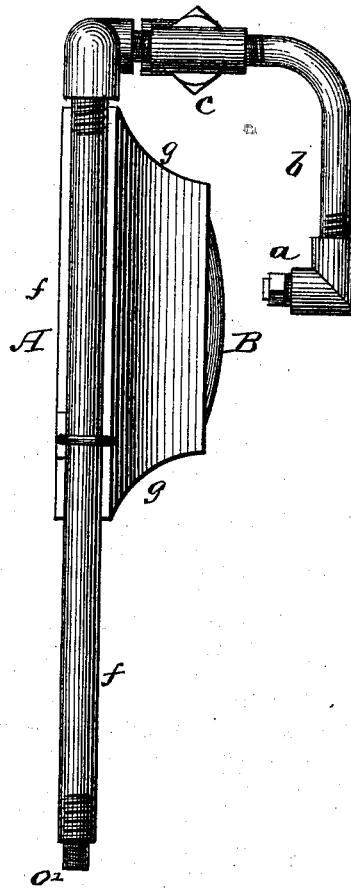
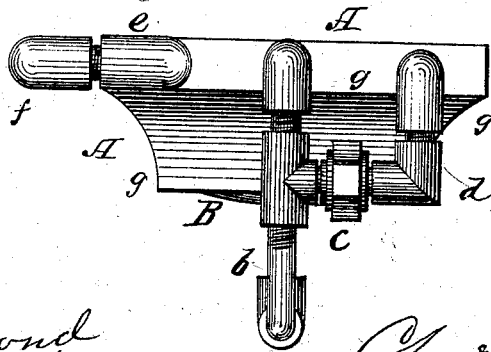


Fig. 3.



Witnesses:

L L Bond
 O W 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 AND GAS-GENERATOR.

Specification forming part of Letters Patent No. **203,830**, 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 and Gas-Generator, of which the following is a full description, reference being had to the accompanying drawing, in which—

Figure 1 is a bottom view; Fig. 2, a side view, and Fig. 3 an end view.

The object of this invention is to improve the construction and operation of hydrocarbon or oxyhydrocarbon burners and gas-generators which operate by the combustion of the gases generated in them, and also generate an additional quantity of gas for further or future use; and its nature consists in forming a narrow or thin border around and forming a part of the retort, so as to become more highly heated than the body thereof, thereby partly performing the office of a surrounding pipe; and in the combinations of the pipes and burner or jet therewith.

In the drawings, A represents the retort, which is divided into three separate compartments in its interior, similar to those shown in my Patent No. 191,144; B, a circular convex portion for spreading the flame; *a*, the burner or jet from which the gases or vapors forming the flame issue; *b*, the gas or vapor pipe leading from the oil-compartment of the retort to the burner *a*; *c*, a coupling or union connecting the water-gas pipe with the pipe *b*; *d*, water-gas pipe; *e f*, pipes leading from the gas-generating compartment to a gasometer or other suitable gas-holder; *o o'*, oil-pipes, and *w* water-pipe.

The retort A is made of cast-iron or other suitable metal, and is divided into three separate longitudinal compartments in the ordinary manner. Its outer edges or boundaries *g* are made thin, so that they may become highly heated when in operation, and roast the gases or vapors, as well as assist in their formation. The pipes *o o'* are connected, by suitable extensions, with an oil-reservoir located either

within or without the building, and the water-pipe *w* is connected with a water-service pipe, or with a water tank or reservoir, and the pipes *w o o'* are filled or partly filled with wire cloth or gauze rolled and inserted, as shown, at the pipe *o*, which is partly in section, for regulating the quantity or flow of material. Other means of regulation may be adopted for regulating the supply; but the means shown are preferred, as these pipes, when near the retort, are in contact with the flame, and the wire filling furnishes additional heating-surface. In the form here shown the exit-pipes are on the same plane as the inlet-pipes. The pipe *b* leads from the oil-compartment direct to the burner *a*, and the pipe *d*, leading from the water-compartment, is let into the pipe *b* by the coupling or union *c*. Instead of this coupling *c*, which intersects at right angles, a V or branch coupling may be used in its place, so as to bring the two currents together with an equal flow. The oil-pipe *o'* leads to a separate compartment, and the vapor there generated is roasted into a permanent gas by the thin edge *g* connected therewith and pipes *e f*, which are reached and heated by the flame. The gas so formed is conducted off from the pipe *f* to a suitable gas-holder, from which it is distributed off for lighting purposes, or for heating an ordinary gas-stove. When the burner and generator are in place and properly connected the pipe-support *x* will be unnecessary, and may be omitted.

It will be seen that in this form the two streams of oil-gas and superheated steam are united behind the burner, so that but one flame is formed.

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

The retort A, having the enlarged body flaring outward and upward to a border of less diameter, substantially as shown, for the purpose described.

CHARLES HOLLAND.

Witnesses:

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