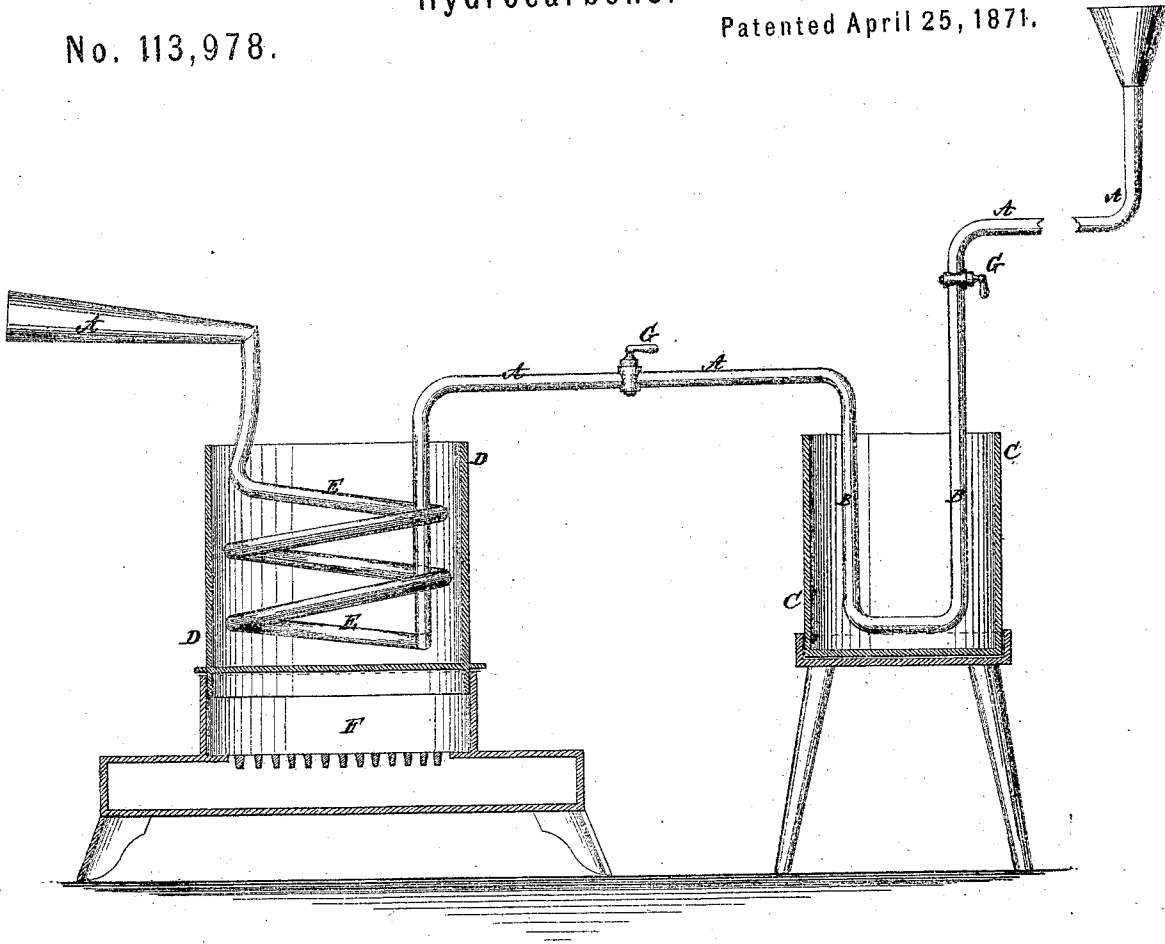


JOHN BUTLER.
Improvement in Apparatus for Vaporizing Volatile
Hydrocarbons.

No. 113,978.

Patented April 25, 1871.



Witnesses:

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Smell

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PER

[Signature]
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UNITED STATES PATENT OFFICE.

JOHN BUTLER, OF NEW YORK, N. Y.

IMPROVEMENT IN APPARATUS FOR VAPORIZING VOLATILE HYDROCARBONS.

Specification forming part of Letters Patent No. **113,978**, dated April 25, 1871.

To all whom it may concern:

Be it known that I, JOHN BUTLER, of the city, county, and State of New York, have invented a new and useful Improvement in Vaporizing Volatile Hydrocarbons; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which the figure is a detail vertical section of my improved apparatus.

My invention has for its object to furnish a simple and convenient apparatus for vaporizing volatile hydrocarbons, which shall be so constructed as to vaporize the oil wholly and in such a way that only a small quantity of the oil may be in the gas-house at a time, and that will wholly prevent the escape of the vapor into the gas-house; and it consists in vaporizing the oil in a coil, and in the construction and combination of the various parts of the apparatus by means of which this is rendered practicable, as hereinafter more fully described.

A represents a pipe, which is extended out through the wall of the gas-house into such a position as to receive the oil outside of the gas-house, so that there shall be no oil in the building except the small quantity in the pipes. As the pipe A approaches the vaporizer, it is formed into a siphon, B, as shown in the figure, said siphon being placed in a vessel, C, of cold water. From the vessel C the pipe extends to the vaporizing-vessel D, where it is formed into a coil, E, and from which the pipe leads to the roasting-furnace described in Letters Patent No. 84,259, issued to me November 24, 1868. The vessel D is placed over a stove or furnace, F, to heat the water contained in the said vessel D to such a point that its heat may be sufficient to vaporize the oil

contained in the coil E. Said vapor as it is formed passes on through the pipe A to the roasting-furnace, where it is converted into a permanent gas.

By this construction the cold water in the vessel C at once condenses any vapor that may by any chance pass back to the siphon B, rendering it impossible for any vapor to pass back through the pipe and escape into the room.

The pipe A is provided with a stop-cock, G, upon each side of the siphon B, to prevent any vaporization from the oil in the siphon B, when the apparatus is not running said siphon being always full of oil.

By this apparatus the oil is vaporized in small quantities as it flows into the coil E, and only a small quantity of the oil can be in the gas-house at any one time, making the operation entirely safe.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. Vaporizing volatile hydrocarbons in a coil of pipe, substantially as herein shown and described, and for the purpose set forth.

2. The combination of a siphon, B, and cold-water or condensing vessel C with the inlet-pipe conducting the hydrocarbon to the vaporizer, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the inlet-pipe A, siphon B, cold-water or condensing vessel C, hot-water or vaporizing vessel D, coil E, and stop-cocks G with each other, substantially as herein shown and described, and for the purposes set forth.

The above specification of my invention signed by me this 25th day of January, 1870.

JOHN BUTLER.

Witnesses:

GEO. W. MABEE,
JAMES T. GRAHAM.