

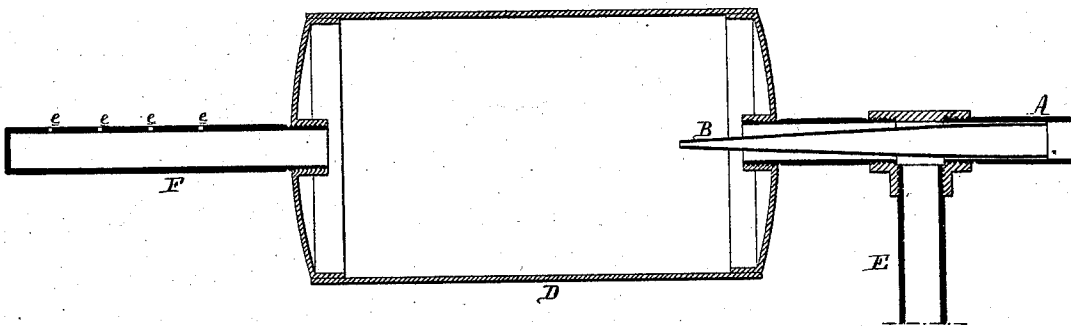
W. RYNER.

Apparatus for Burning Hydrocarbons.

No. 149,529.

Patented April 7, 1874.

FIG. 1.



WITNESSES,

Geo. B. Harding.
John Parker

Wm. Ryner
by his Attys
Hewson and Son

UNITED STATES PATENT OFFICE.

WILLIAM RYNER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND JOHN C. HOPEWELL, OF FLEMINGTON, NEW JERSEY.

IMPROVEMENT IN APPARATUS FOR BURNING HYDROCARBONS.

Specification forming part of Letters Patent No. 149,529, dated April 7, 1874; application filed December 4, 1871.

To all whom it may concern:

Be it known that I, WILLIAM RYNER, of Philadelphia, county of Philadelphia and State of Pennsylvania, have invented a Liquid-Fuel Burner, of which the following is a specification:

My invention relates to liquid-burners in which a volume of steam is made the medium whereby a stream of hydrocarbon is propelled and caused to unite with the steam; and my invention consists of the combination of certain tubes, a chamber, and burner, as fully described hereafter.

In the drawing, Figure 1 is a sectional view of my liquid-fuel burner.

A is a pipe, communicating with a vessel containing petroleum, benzine, or other hydrocarbon, and within this pipe is a nozzle, B, the tapering end of which projects a short distance into a vessel, D, with which the pipe A also communicates, as shown. A pipe, E, serves to convey superheated steam under pressure to the space between the interior of the pipe A and the nozzle B. The pipes are furnished with suitable cocks for regulating the supply of both oil and steam. At the opposite end of the vessel D is a pipe, F, which may be continued to any desired extent in any direction, the pipe being closed at the end,

and, in the present instance, having perforations at the top. The superheated steam, passing through the pipe E, and thence through the space between the said pipe and the nozzle B, rushes into the vessel D, and induces a jet of petroleum or other hydrocarbon from the nozzle B into the vessel. The jet, being thus enveloped by and intimately mixed with the superheated steam, forms, with the latter, an inflammable gas, which, escaping under pressure through the perforations *e e*, will, when ignited, burn with an intense heat.

I am aware that liquid hydrocarbon has been carried by a steam-jet into and through a nozzle, and burned at the end of the latter, and I make no claim to this; but

I claim—

The combination of the steam and oil pipes for vaporizing a hydrocarbon, a chamber in which the vapors are received and mixed, and a burner communicating with the said chamber, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM RYNER.

Witnesses:

WM. A. STEEL,
JOHN K. RUPERTUS.