H. Gerner,

Burning Hydrocarbon.

No. 48,806. Patented July 18, 1865.

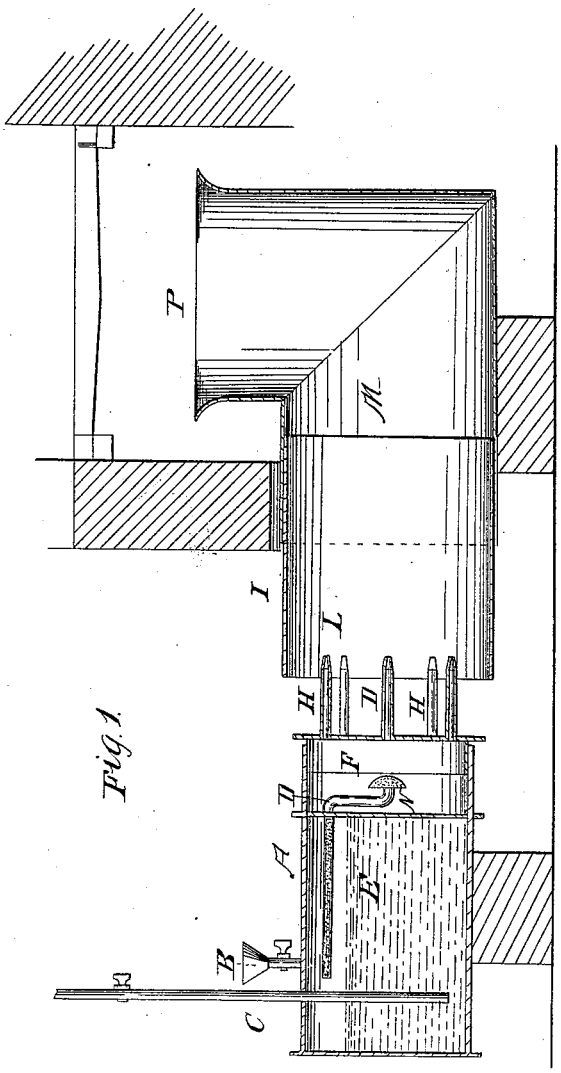

Fig. 1.

Witnesses:
Theo. Tuschey
Wm Fraun.

Inventor:
Henry Gerner.

UNITED STATES PATENT OFFICE.

HENRY GERNER, OF NEW YORK, N. Y.

IMPROVED HYDROCARBON-BLOWER FOR FURNACES OF STEAM-BOILERS, &c.

Specification forming part of Letters Patent No. **48,806**, dated July 18, 1865.

To all whom it may concern:

Be it known that I, HENRY GERNER, of the city, county, and State of New York, have invented a new and Improved Hydrocarbon-Blower; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

The drawing represents a longitudinal vertical section of this invention.

This invention consists in the use of a current of hydrocarbon vapors formed by the action of steam, and mixed therewith and with a suitable percentage of atmospheric air, in combination with a furnace, in such a manner that an artificial draft is obtained without incurring any loss of heat; and, furthermore, a quantity of inflammable gases is introduced into the furnace, and thereby the heat is increased and the consumption of fuel in furnaces is reduced.

A represents a vessel, which is divided in two compartments or chambers, E and F, by the vertical partition N. It is provided with a funnel, B, leading to the compartment E, and through this funnel a hydrocarbon fluid—such as petroleum, naphtha, coal-oil, gas-tar, rosin-oil, or such like inflammable materials—is introduced, and should be kept in said chamber in such quantity as always to cover the outlet of the pipe C into said chamber. The pipe C is intended to communicate with a steam-generator, and through it steam is introduced into the chamber E, and thereby the hydrocarbon fluid is vaporized and caused to form, in combination with the steam, highly-inflammable gases or vapors, which only require to be combined with atmospheric air to be perfectly combustible. These vapors are conducted through the perforated pipe D into the chamber F, and they discharge into this chamber through a rose at the end of the pipe D, and from said chamber the mixed steam and hydrocarbon vapors discharge in fine jets through pipes H H into the vessel I, which is composed of two pipes, L M, fitted in each other, so that the same can be drawn in or out to adjust the distance of the mouth of the pipe L from the nozzles H H.

The pipe M is provided with a bell-shaped mouth, P, for the purpose of spreading the vapors over an extended area. By the vapors issuing from the nozzles H a partial vacuum is formed in the vessel I, and thereby a current of atmospheric air is caused to rush into said vessel and pass off, in combination with the mixed hydrocarbon vapors and steam, through the mouth P. This mouth is to be placed under the grate-bars of a furnace, as shown; or, when no grate-bars are used, the mixed vapors (steam and air) are introduced directly into the flames.

By drawing the pipe L in or out the supply of atmospheric air is adjusted according to the wants of the furnace. By these means the heat in a furnace can be considerably increased, and the fuel, be it wood, peat, or coal, is consumed with great economy.

I do not claim the combination of hydrocarbon vapor with steam, or with steam and atmospheric air; nor do I claim the generation of hydrocarbon vapor by means of steam from a boiler passing through the hydrocarbon.

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

1. Superinducing the combustion of fuel by introducing directly thereto a hydrocarbonaceous vapor when the same is produced by forcing steam into and through a body of petroleum or other hydrocarbon liquid, and when said vapor, together with the atmospheric air, is made to constitute the draft medium, in the manner herein described.

2. The hydrocarbon-chamber E, provided with a steam-supply pipe, C, and vapor-discharge pipe D, in combination with the chamber F, jets H H, and air-induction pipe L M, constructed and operating substantially as and for the purpose described.

3. Making the air-induction pipe L adjustable, substantially as and for the purpose specified.

HENRY GERNER.

Witnesses:

M. M. LIVINGSTON,

C. L. TOPLIFF.