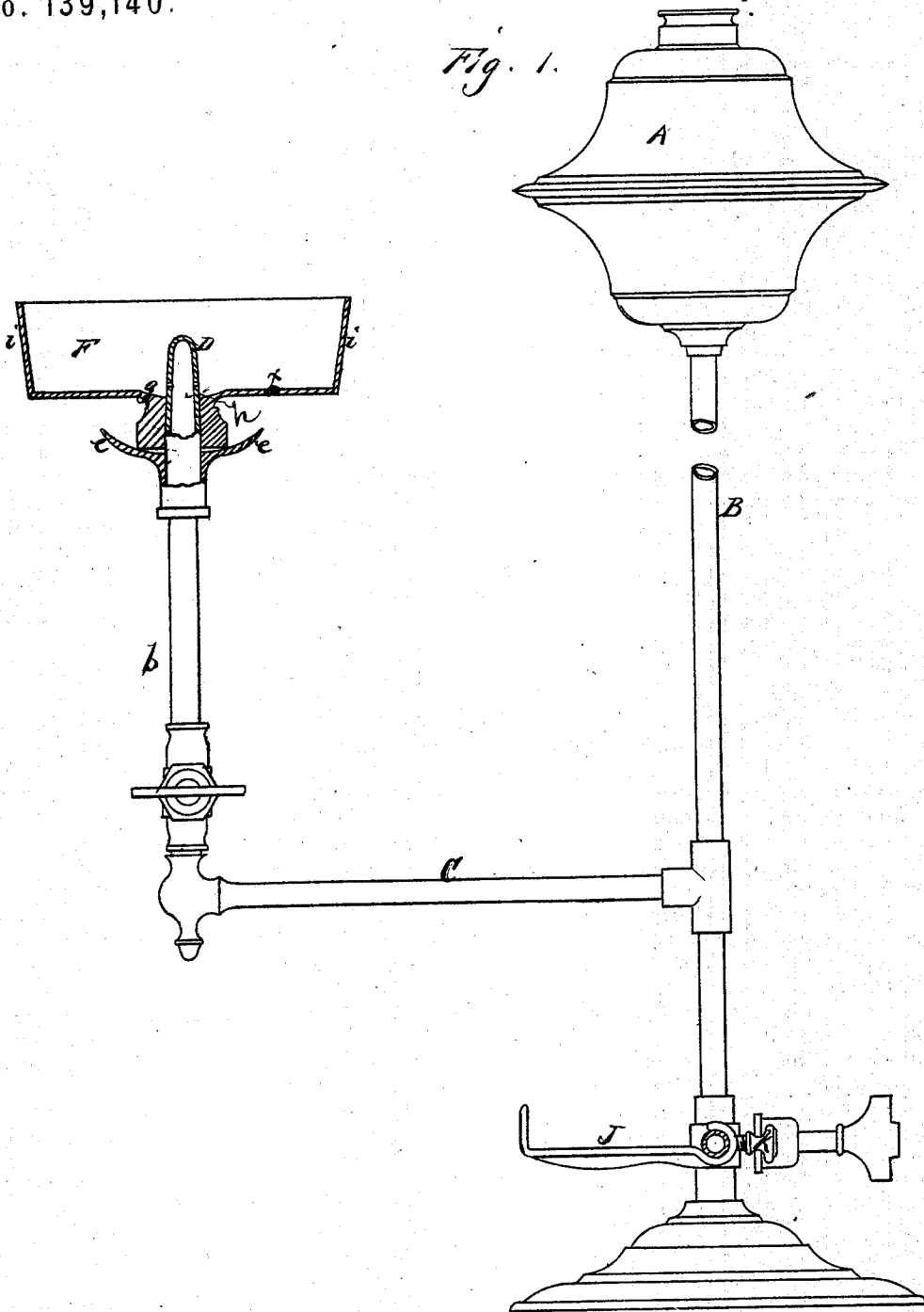


W. FRIEL.
Lamp-Heaters.

No. 139,140.

Patented May 20, 1873.

Fig. 1.



Witnesses

J. L. Corns
George West Jr

Inventor

William Friel
per Doney &
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UNITED STATES PATENT OFFICE.

WILLIAM FRIEL, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN LAMP-HEATERS.

Specification forming part of Letters Patent No. **139,140**, dated May 20, 1873; application filed March 13, 1872.

To all whom it may concern:

Be it known that I, WILLIAM FRIEL, of San Francisco, San Francisco county, State of California, have invented an Improved Vapor-Burner for Heating; and I do hereby declare the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates more particularly to that class of vapor-burners which are used in the ordinary gasoline cook-stoves for the purpose of producing heat for cooking purposes. My improvement consists in the employment of a peculiar dish, which is fixed to the generator just below the openings through which the vapor or gas escapes to be burned, and which serves, by spreading the flame, to produce great heat, suitable for cooking or other purposes.

In order to explain my invention, reference is had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is an elevation.

In order to properly explain my invention I have connected it with an ordinary fountain, such as is used in burning gasoline and other light hydrocarbons in order to give the required pressure.

A represents the fountain, which is placed at the upper end of the vertical tube B, and C is a branch pipe which connects with the pipe *b* to lead the hydrocarbon-oil to the generator D. This generator is filled with a fibrous material in the ordinary way, and is provided with one or more small holes a short distance below the upper closed end, through which the vapor escapes to be burned.

Thus far my burner does not materially differ from the ordinary vapor-burner.

In order to produce a heating flame with the burning vapor I first secure to the generator-tube D, a short distance below the flame, a small dish or outwardly-projecting flange, *e*, and above this dish I place a large dish, F, which I call a "heat-intensifier." The dish F is herein represented as having six sides, *i*; but the number of sides is not material, one side serving the same purpose, as will be hereinafter described. In the center of the bottom *g* of this dish is a hole, *h*, so that the dish can be slipped down over the upper end of the burner and rest in the small dish *e*.

When thus placed the holes in the generator through which the vapor issues to be burned should be a little above the bottom *g* of the dish. The sides of the dish stand upward at almost a right angle, as shown, so that the flame of the burning vapor will strike in the angle formed by the junction of the bottom and sides, and be deflected upward and spread to each side at the same time.

In order to produce the proper effect the distance between the holes through which the vapor issues and the upward-projecting sides *i* should be regulated according to the size of the opening through which the vapor issues. Two holes, opposite each other, are then sufficient to fill the pan with a blue flame of great intensity.

Great care must be taken in order to have the sides *i* stand at the proper angle, as a little too much inclination outward, or a nearer vertical position than the proper one, will destroy the effect intended to be gained.

When the gasoline is turned on a small portion will run down the outside of the generator through the hole in the center of the bottom of the dish F and be caught in the small dish *e*, and, when ignited, will produce a flame below the dish F, which will spread beneath its bottom, and heat it to such an extent as to greatly facilitate the burning of the vapor inside of the dish.

A netting of bars may be laid across the dish F to hold the vessel for cooking, so that there may be a draft from the air-holes *x* in the bottom toward the top.

Should the holes through which the vapor issues become clogged, it will only be necessary to remove the dish F, when the holes can be opened with a pin.

By using several of my intensifiers a cooking stove can be produced that will cook for a large family with great facility.

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

The dish F, constructed as described, in combination with the dish *e* and generator D, arranged substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand and seal.

WILLIAM FRIEL. [L. S.]

Witnesses:

GEORGE WUEST, Jr.,
J. L. BOONE.