(No model.)

L. H. FRIEDBURG.

GAS BURNER.

No. 457,153. Patented Aug. 4, 1891.

Fig. 1.

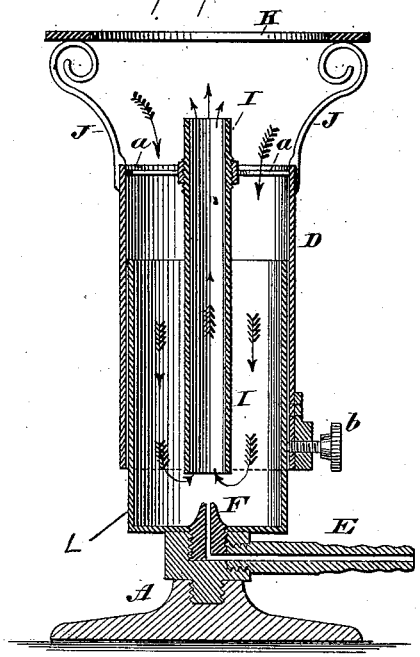


Fig. 2.

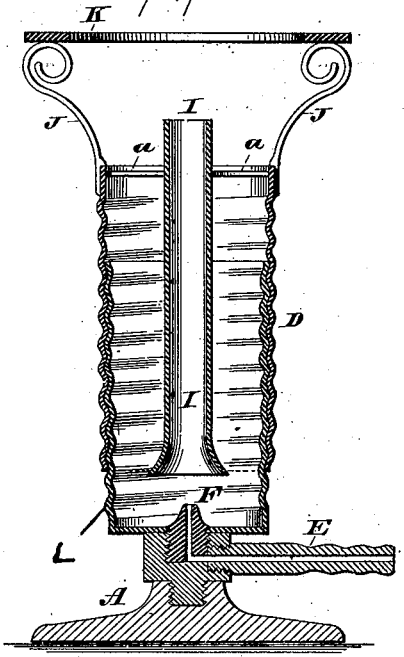


Fig. 3.

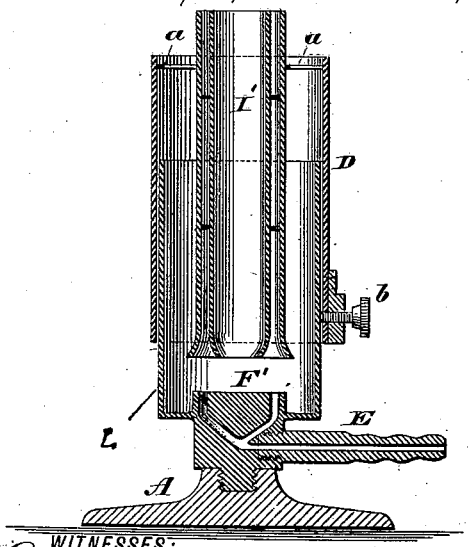


Fig. 4.

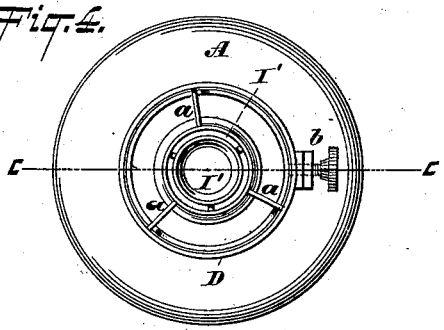
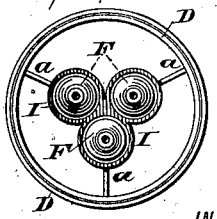


Fig. 5.



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UNITED STATES PATENT OFFICE.

LUDWIG HEINRICH FRIEDBURG, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND CHARLES E. DRESSLER, OF SAME PLACE.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 457,153, dated August 4, 1891.

Application filed October 9, 1890. Serial No. 367,473. (No model.)

To all whom it may concern:

Be it known that I, LUDWIG HEINRICH FRIEDBURG, residing in the city of New York, in the county and State of New York, have invented an Improved Gas-Burner, of which the following is a specification.

My invention relates to an improved gas-burner, my object being to construct a burner that shall produce substantially perfect combustion of the fuel used and afford an extremely hot flame with the aid of a comparatively small amount of fuel. I accomplish this object by combining an inner fuel-pipe which is open at both ends, with an outer pipe or case which is open above the receiving end of the fuel-pipe to air and below said fuel-pipe to gas, said fuel-pipe dipping into said outer pipe.

The invention also consists in other features of construction, which are hereinafter more fully specified.

Reference is had to the accompanying drawings, forming part of this specification, wherein—

Figure 1 is a vertical central section of my burner. Fig. 2 is a vertical central section of a modification. Fig. 3 is a vertical central section of still another modification. Fig. 4 is a plan view of the burner shown in Fig. 3. Fig. 5 is a plan view of another modification of my burner.

Similar letters refer to similar parts in all figures.

A is a suitable base or standard so formed as to receive the gas-supply pipe E and the gas-discharge nozzle F and allow a passage for the gas through the two. The base A supports a cylinder or case L, into which the nozzle F enters, as shown. The lower end of the cylinder L is closed, except to the nozzle, but its upper end is open to the air.

D is a tube sliding on or screwed to the tube L, so as to be movable up and down on the tube L.

I is an upright tube open at both ends and held to the tube D, so as to be directly above the gas-feed F. This tube I is held in position by means of braces *a a*, which unite it with the outer tube D. Brackets J and a supporting-ring K, as shown in Figs. 1 and 2, may be secured to the upper end of the tube D, or otherwise supported when it is desirous to place anything to be heated for some length of time over the flame. The cylinder L is closed at its lower end, so as not to allow the entrance of air from below. It will now be seen that when the gas is turned on through the gas-supply pipe E and feed-nozzle F it will ascend directly up through the tube I and at the same time carry with it by suction the air from the lower part of the surrounding case L. A draft of air is thus formed downward through the space between the outer case and the pipe I, as indicated by the arrows in Fig. 1. This air mingles with the gas and the mixture goes up through the fuel-tube I. The supply of air is regulated by making the outer case lengthwise extensible and contractible either by constructing it of the two or more sections L D, which fit into one another telescopically, as in Figs. 1 and 3, in which case a clamping-screw *b* can be used to tighten each joint, or the sections of the extensible cylinder L D may be threaded and united, as in Fig. 2. Adjustability as to length of the mixing-chamber below the pipe I can also be obtained by moving the pipe I up or down in its support, to which end it is shown screwed into its support in Fig. 1.

As the air from without rushes into the upper end of the cylinder D it will become heated, since it passes down by the side of the pipe I, which is more or less heated by the flame. Thus the air becomes more rarefied, so that when it meets the gas it is already in good condition to support combustion.

Fig. 2 illustrates how the lower end of the pipe I may be flanged outward, so as to more easily receive the gas.

Figs. 3 and 4 show the application of an annular nozzle F′.

Fig. 5 illustrates the application of more than one nozzle F and fuel-pipe I in one case L, showing, in fact, three nozzles and three fuel-pipes. It is of course not necessary that the parts I, D, or L be of circular cross-section. They may have any desired form.

Having thus described my invention, I claim—

The combination of the base A and upright cylinder L, which is supported by said base and whose lower end is closed to the air, while its upper end is open, with the gas-nozzle F in said base, the upright tube I, and vertically-movable ring or tube D, and means, substantially as described, for securing said tube I to the movable ring or tube D, substantially as specified.

LUDWIG HEINRICH FRIEDBURG.

Witnesses:
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