

(No Model.)

2 Sheets—Sheet 1.

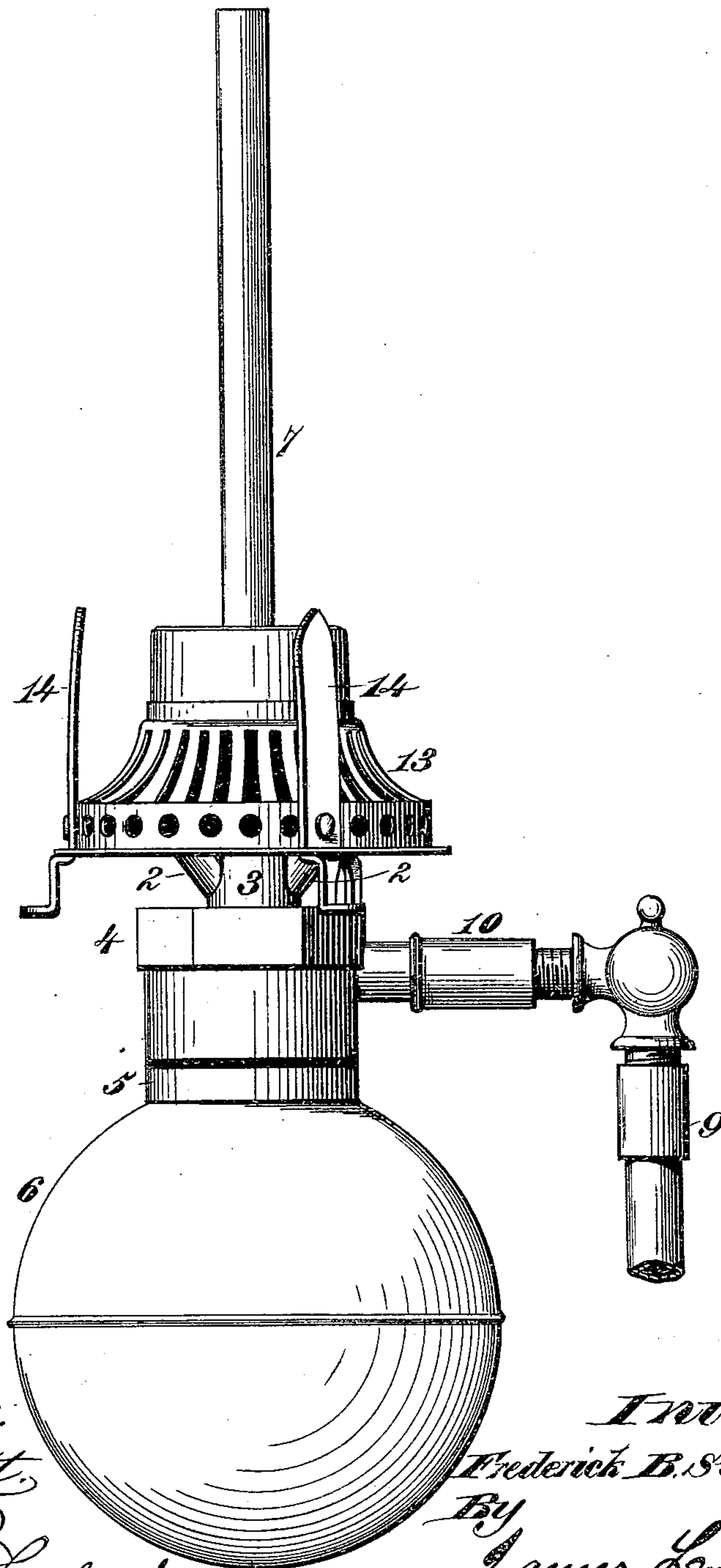
F. B. STRUNZ.

CARBURETOR FOR ARGAND GAS BURNERS.

No. 350,901.

Patented Oct. 12, 1886.

Fig. 1.



Witnesses:

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By

James L. Norris,
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

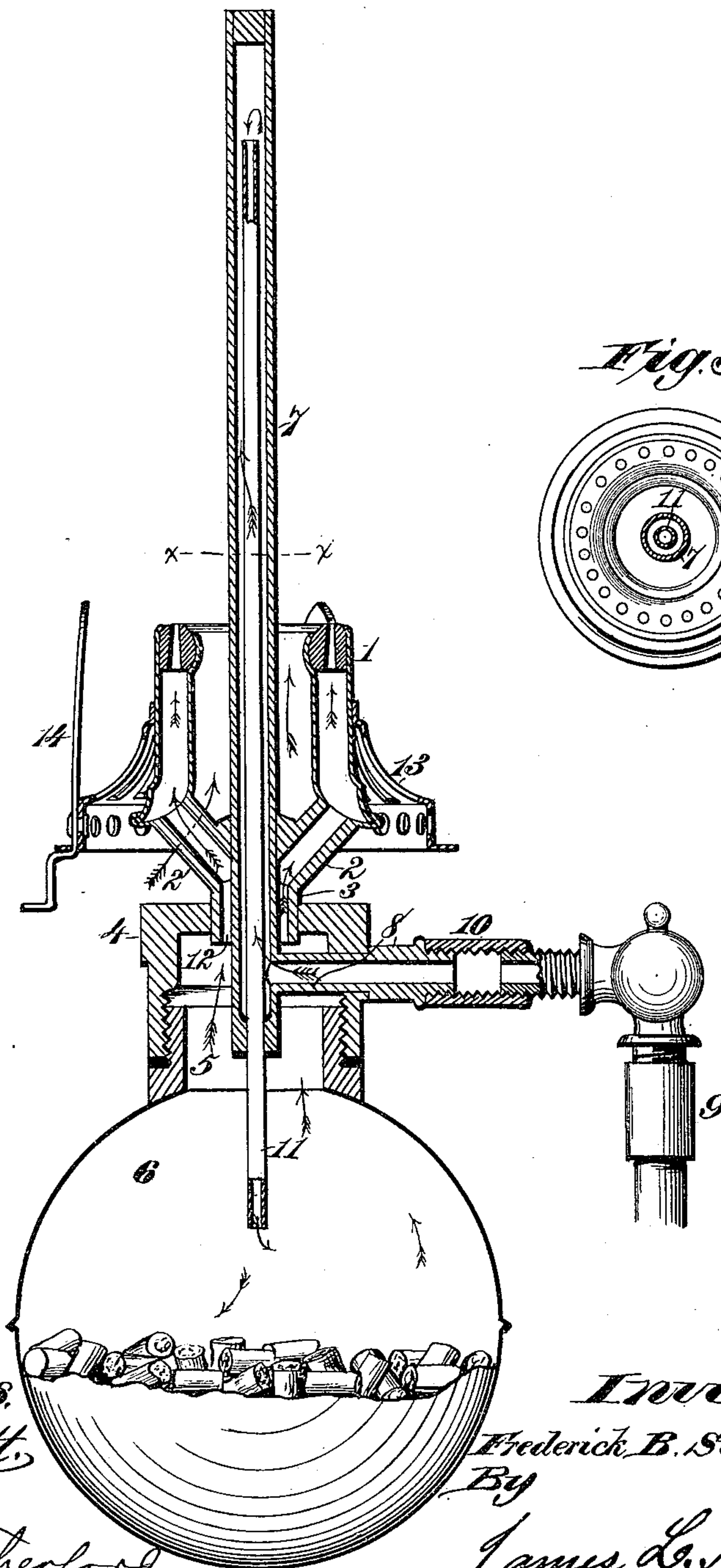
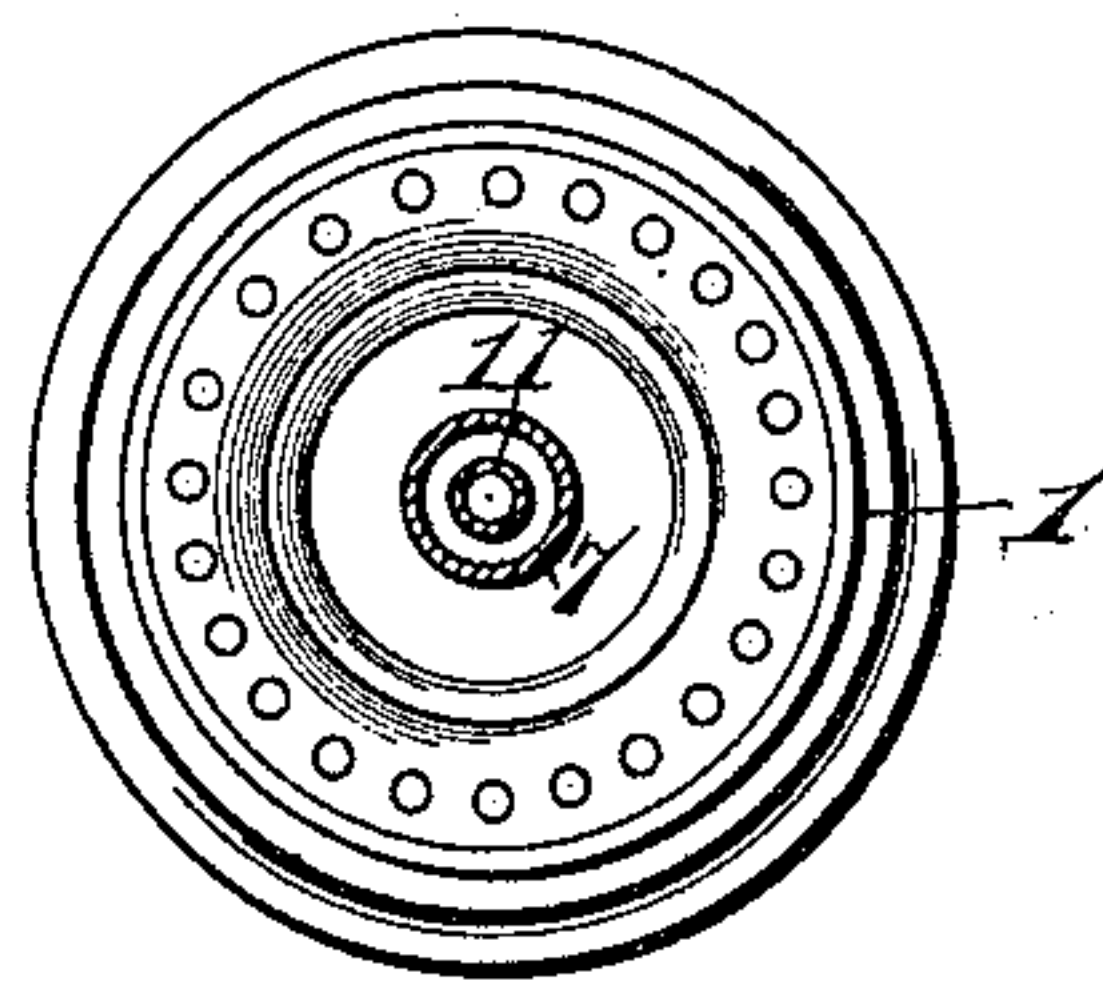


Fig. 3.



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UNITED STATES PATENT OFFICE.

FREDERICK B. STRUNZ, OF PITTSBURG, PENNSYLVANIA.

CARBURETOR FOR ARGAND GAS-BURNERS.

SPECIFICATION forming part of Letters Patent No. 350,901, dated October 12, 1886.

Application filed April 22, 1886. Serial No. 199,805. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK B. STRUNZ, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Carburetors for Argand Gas-Burners, of which the following is a specification.

This invention relates to those gas burners having carburetors in which the gas in its passage to the carbureting-vessel is heated by the burner-flame, and is supplied to the latter in an enriched and heated condition.

The object of the invention is to provide an Argand gas-burner with novel means for heating the gas in its passage to a pendent vessel containing naphthaline or other hydrocarbon, so that the gas is heated by the flame from the burner prior to its entrance into the hydrocarbon-vessel.

The object of my invention I accomplish in the manner and by the novel construction and combination of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of an Argand gas-burner embodying my invention; Fig. 2, a central vertical sectional view of the same; and Fig. 3 a sectional view taken on the lines *x x* of Fig. 2, the chimney-support and hydrocarbon-vessel being omitted.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, reference being made to the accompanying drawings, in which—

The numeral 1 indicates an Argand gas-burner comprising two annular concentric casings separated by an intervening space, and an annular perforated tip through which the gas issues. The inner casing is tubular to provide the usual central air-duct, and at its lower end is provided with two gas-entrance tubes, 2, converging into the tubular neck 3, which passes through and is fixed in the top wall of a cup-shaped cap having an internal screw-thread engaging an externally screw-threaded neck, 5, at the top portion of a spherical or other suitably-shaped vessel, 6, for containing the naphthaline or other hydrocarbon material used to carburete and enrich the illuminating-gas. The hydrocarbon-vessel is thus made to depend from and is supported by the neck comprising

part of the Argand burner, and it may be readily unscrewed to detach it from the screw-cap without disturbing other parts for supplying it with the hydrocarbon material. A gas-heating tube, 7, closed at both its upper and lower ends, extends from within the screw-cap upwardly through the burner and its neck and rises to a suitable distance above the burner-tip, so that the flame therefrom serves to thoroughly heat the tube. The screw-cap is provided with a lateral nipple, 8, extending inwardly and communicating with the lower end of the gas heating tube, said nipple being connected with the gas supply or service pipe 9 in any suitable manner—as, for example, by a screw-coupling, 10. A gas-inlet tube, 11, open at both its upper and lower ends, extends from within the hydrocarbon-vessel upwardly through the gas-heating tube to a point adjacent to the upper end thereof in such manner that the gas delivered into the lower end of the outer tube, 7, is forced to rise therein and enter the upper end of the inner tube, 11, by which it is conducted into the hydrocarbon-vessel, where it is carbureted, and consequently enriched, by the hydrocarbon material or other carbureting agent. The gas rising through the outer tube is highly heated, and then passes in such condition into the hydrocarbon-vessel through the inner tube, where it vaporizes the hydrocarbon and passes through the tubular neck 3 and gas-entrance tube 2 to the burner. It is important that the outer tube be so supported that there is an annular unobstructed space, 12, between such tube and the inside of the neck, in order that the heated and enriched gas from the hydrocarbon-vessel may freely pass through such space to the burner. The outer casing of the burner may carry a perforated chimney-support, 13, having spring-fingers 14 for holding the chimney in proper position. It will be seen that the convergent tubes 2 separate the base of the burner from the top of the screw-cap 4 to such an extent as to provide for the free passage of air to the central air-duct formed by the inner casing of the burner.

Heretofore an apparatus for enriching illuminating-gas has comprised a hydrocarbon-vessel, a vertical brass or copper tube extending directly from the bottom of the vessel through and to a short distance above the same,

and having lateral perforations within the vessel adjacent to the top thereof, said tube connecting at its upper end with the gas-supply pipe, a series of ordinary burner-tips arranged
5 on horizontal pipes projecting from said tube above the vessel, a vertical pipe located in the tube and communicating at its lower end with a curved pipe rising within the vessel and terminating above the hydrocarbon material
10 therein, and another pipe rising within the tube, the latter containing a cock whereby the descending gas is heated and can be diverted either into the hydrocarbon-vessel or directly to the burner-tips without passing through
15 said vessel. This construction of apparatus does not admit of the employment of an Argand burner, as in my construction, and besides, the inflowing gas to enter the hydrocarbon-vessel simply flows down the aforesaid
20 tube and vertical pipe to the curved pipe which leads it to the vessel. This does not effectually heat the gas, as in my construction, where the gas enters below, rises in a tube, descends another tube, and then passes to the annular space
25 of the Argand burner surrounding the tubes, whereby the inflowing gas is effectually heated without employing heat arresters or conductors projecting laterally over the burner-flames, or devices for breaking up the gas into small
30 streams, as in the prior construction. My invention also differs from the said prior construction in that the hydrocarbon-vessel is directly attached to and depends from a tubular neck on the Argand burner, and the gas-heating tube is closed at both ends. Further, my
35 invention simplifies the construction, reduces the cost of the apparatus, and provides a more desirable Argand burner than those comprising a hydrocarbon-vessel connected by a lateral pipe with an Argand burner, a tube rising through the burner and passing horizontally and then downwardly to the vessel, and provided with a heat-arresting hood above the
40 burner-chimney, said tube receiving atmospheric air, which is heated by the flame and

passed to the vessel to be mixed with the hydrocarbon vapors and delivered to the burner for consumption. This construction of apparatus is not used for enriching illuminating-gas, and is not adapted therefor, and, besides,
55 a device—such as a flexible tube—must be employed to blow into the hydrocarbon-vessel to start the flame. Such prior constructions are therefore different from my invention and are not claimed by me.

Having thus described my invention, what I claim is—

1. The combination of the Argand gas-burner having gas-entrance tubes provided with a tubular neck, a hydrocarbon-vessel depending
60 from said neck, an outer gas-heating tube closed at both ends and extending through the neck, but separated therefrom to provide a surrounding space open to the vessel, said tube rising above the burner-tip, a gas-supply connected with the lower portion of the heating-tube, and a gas-inlet tube open at both ends and extending from the hydrocarbon-vessel through the gas-heating tube, substantially as
65 described.

2. The combination of an Argand gas-burner having gas-entrance tubes provided with a tubular neck, a cap secured to said neck, a hydrocarbon-vessel attached to and depending
70 from the cap, an outer gas-heating tube closed at both ends and passing from the cap to a point above the burner-tip, a gas supply pipe connected with the lower portion of the gas-heating tube, and a gas-inlet tube open at both
75 ends and communicating at one end with the upper part of the heating-tube and at the other end with the hydrocarbon-vessel, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK B. STRUNZ.

Witnesses:

D. P. BERG,
A. B. DAILY, Jr.