

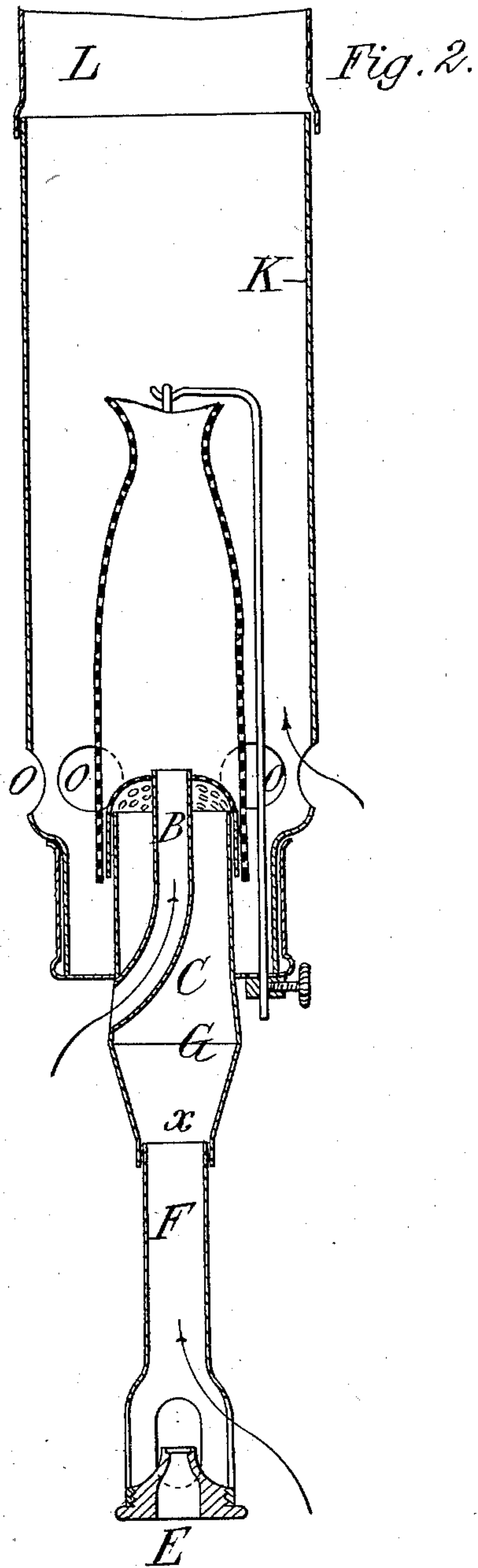
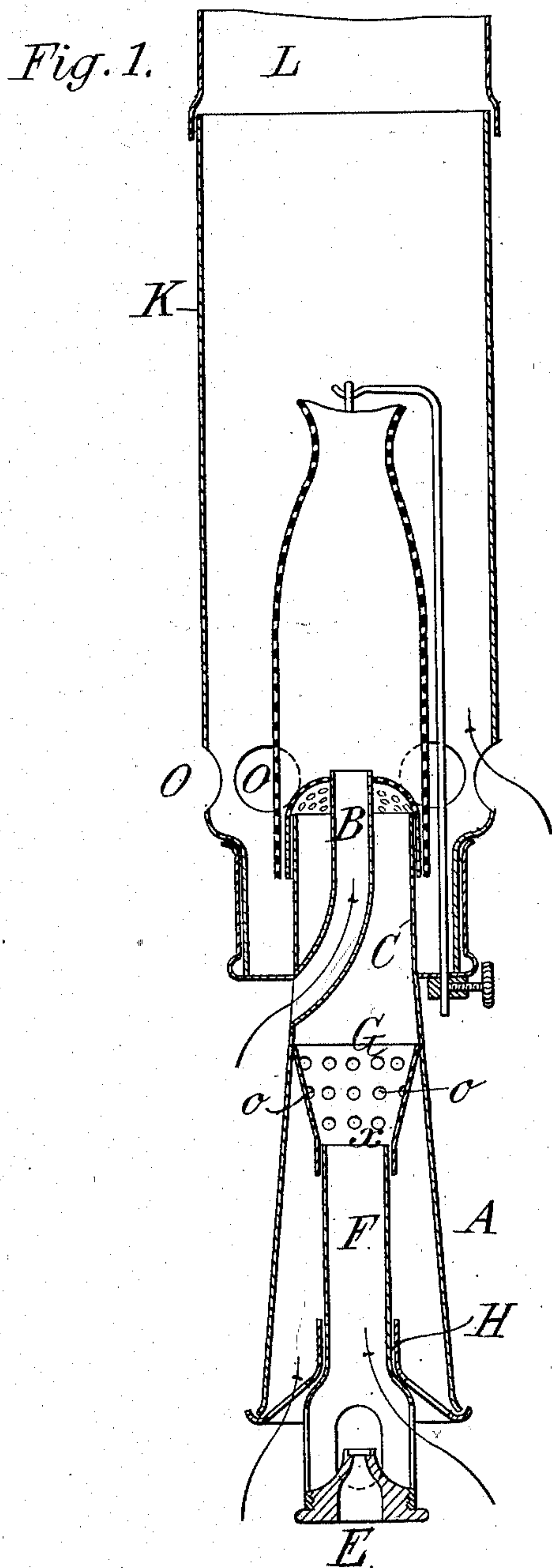
No. 749,478.

PATENTED JAN. 12, 1904.

L. DENAYROUZE.
AIR GAS BURNER.

APPLICATION FILED APR. 2, 1903.

NO MODEL.



WITNESSES:

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INVENTOR:

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By his Attorneys:

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UNITED STATES PATENT OFFICE.

LOUIS DENAYROUZE, OF PARIS, FRANCE.

AIR-GAS BURNER.

SPECIFICATION forming part of Letters Patent No. 749,478, dated January 12, 1904.

Application filed April 2, 1903. Serial No. 150,747. (No model.)

To all whom it may concern:

Be it known that I, LOUIS DENAYROUZE, a citizen of the Republic of France, residing at Paris, France, have invented certain new and useful Improvements in Air-Gas Burners, of which the following is a specification.

The burner which forms the subject-matter of the present application for patent is designed for obtaining a considerably-greater illuminating power than that which has been obtained with the heating-burners hitherto made. According to the pressure of the gas there are provided one or two supplementary air-supplies in addition to the air which is admitted through the Bunsen burner for producing the gaseous mixture that is to burn within the incandescent mantle.

In the accompanying drawings, Figure 1 is a vertical section of a burner constructed according to my invention, and Fig. 2 is a vertical section of a modified form of the burner. In both forms there is a tube B conducting air from without the burner directly to the center of the base of the mantle.

The form shown in Fig. 1 comprises a conical external tube A, which rests on a support H at its lower end, which support has suitable openings. The tube A surrounds the burner and extends always as far as the base of a chamber C, which surmounts the latter. The base of chamber C has perforations *o*. A chimney of any suitable kind surrounds the mantle. Preferably the chimney is in two parts—a lower tube K, having air-holes O near its base, and upper tube L for increasing the draft. The usual Bunsen tube F is smaller in diameter than the chamber C and joins the latter at the upper edge *x* of the tube. The base G of the chamber C is preferably conical, as shown, and is provided with perforations *o*, surrounding the Bunsen tube.

When a sufficient draft is produced by a chimney L, a powerful light is obtained with a very economical consumption of gas or vapor, owing to the following manner in which the burner works: The gas entering the burner at E draws in air after the manner of a Bun-

sen burner and forms an intimate mixture therewith in the burner-tube F. Arrived at the point *x*, this mixture having a certain velocity spreads itself in the chamber C. Through the perforations *o* of the part G of the chamber C air is drawn through the cone A and mingles with the mixture issuing at *x*. There is thus formed a secondary mixture, which rises in the chamber C, and when this mixture issues from the said chamber within the mantle it receives a further addition of air through the tube B. The air entering the chimney through the holes O deflects the diverging flame and confines it within the mantle. This flame being always richer in gas in its interior than on its exterior is completely burned by the supplementary air entering through the tube B. This arrangement reduces to a minimum the resistance which exists to the formation of a homogeneous mixture when it is attempted to introduce air from without into a column of gas passing through a tube which keeps the constituents in contact in a course in which they are guided. It is only into a mixture the speed of which is already slackened that the air brought in by a draft issues in diverging jets, which instead of breaking up the ascending column penetrate freely into the primary mixture already formed at the moment when it expands without being at all obstructed in its rapid travel by the draft and even being helped thereby.

In the modification shown in Fig. 2 the conical piece G is not perforated, and the tube A is no longer required. In this case the only accession of secondary air is through the pipe B, as in the previous case.

Having thus described the nature of this invention and the best means I know of carrying the same into practical effect, I claim—

In an air-gas burner, the combination of a Bunsen-burner tube, a chamber surmounting the same, an air-tube passing through such chamber and terminating at the upper end thereof so as to conduct air from without the burner to the center of the base of an incandescent mantle surmounting the burner and

thus to introduce a central column of free air within the gaseous mixture as it rises from said chamber, the base of the said chamber being perforated, and a tube surrounding the
5 Bunsen-burner tube and conducting air to the perforations in the base of said chamber, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

LOUIS DENAYROUZE.

Witnesses:

ARMENGAUD, Jeune,

MARCEL ARMENGAUD, Jeune.