

J. & G. KEITH.

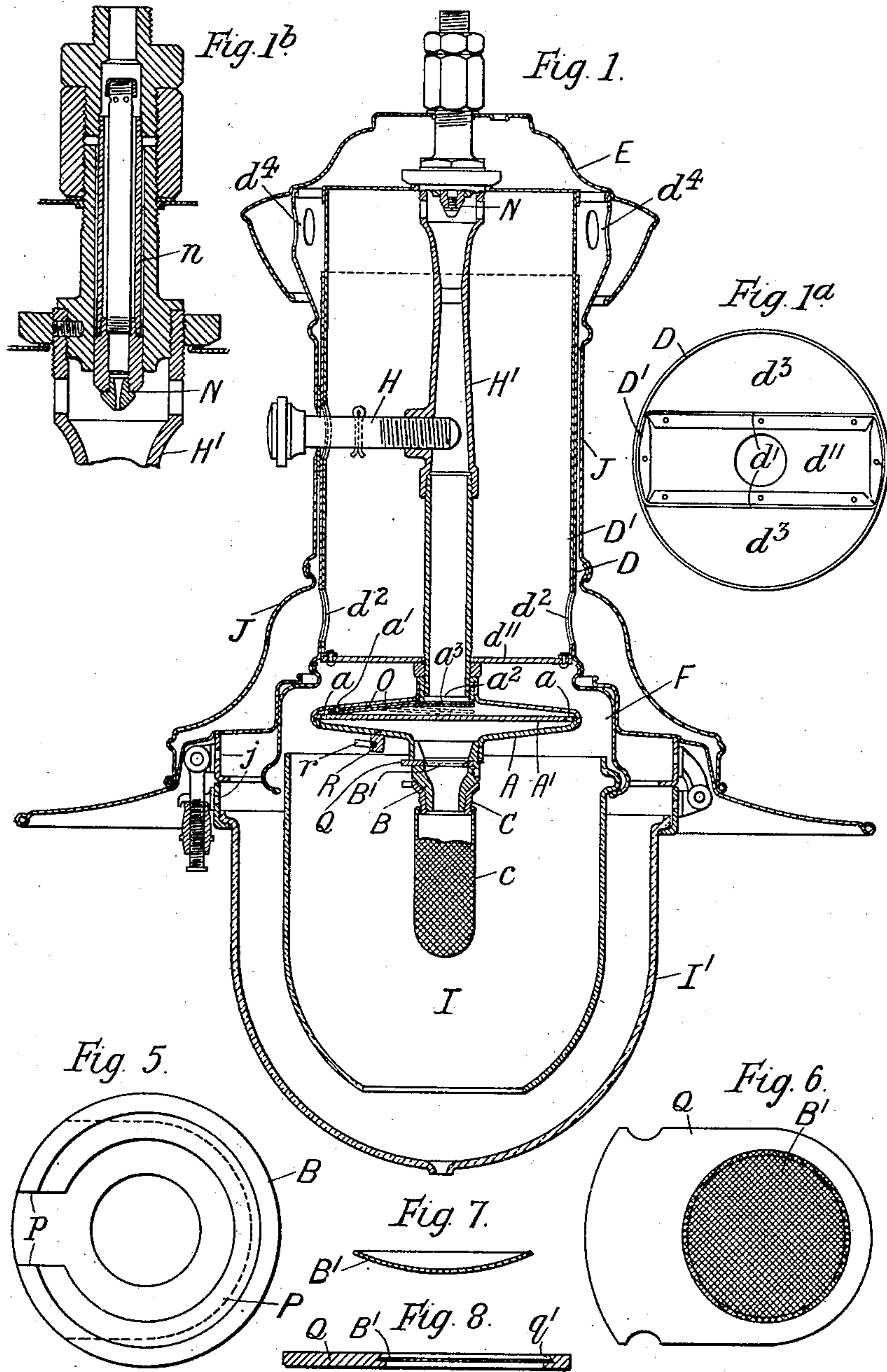
GAS LAMP.

APPLICATION FILED JULY 27, 1908.

917,876.

Patented Apr. 13, 1909.

3 SHEETS—SHEET 1.



Witnesses:-

C. M. Crawford
E. Schallinger

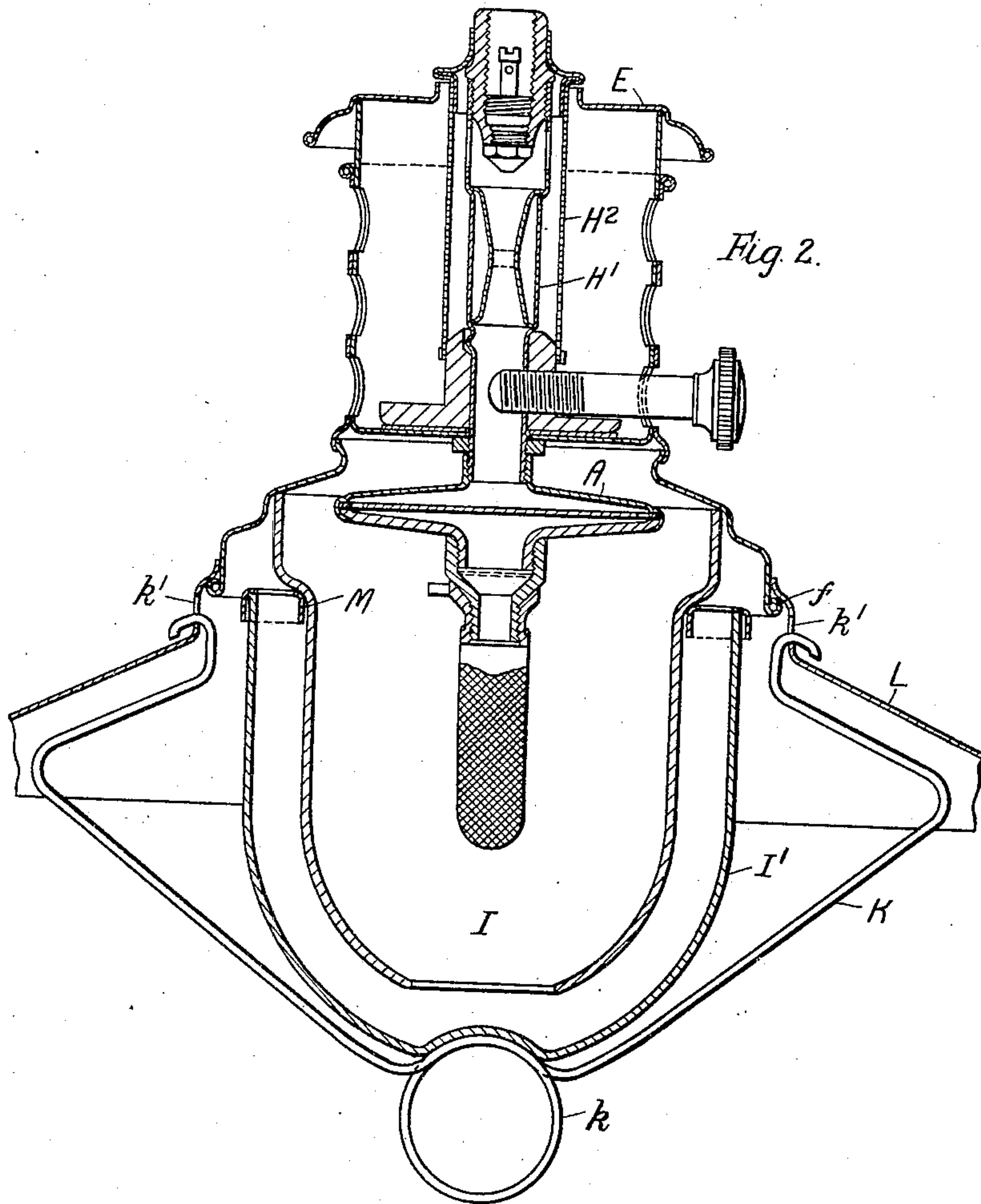
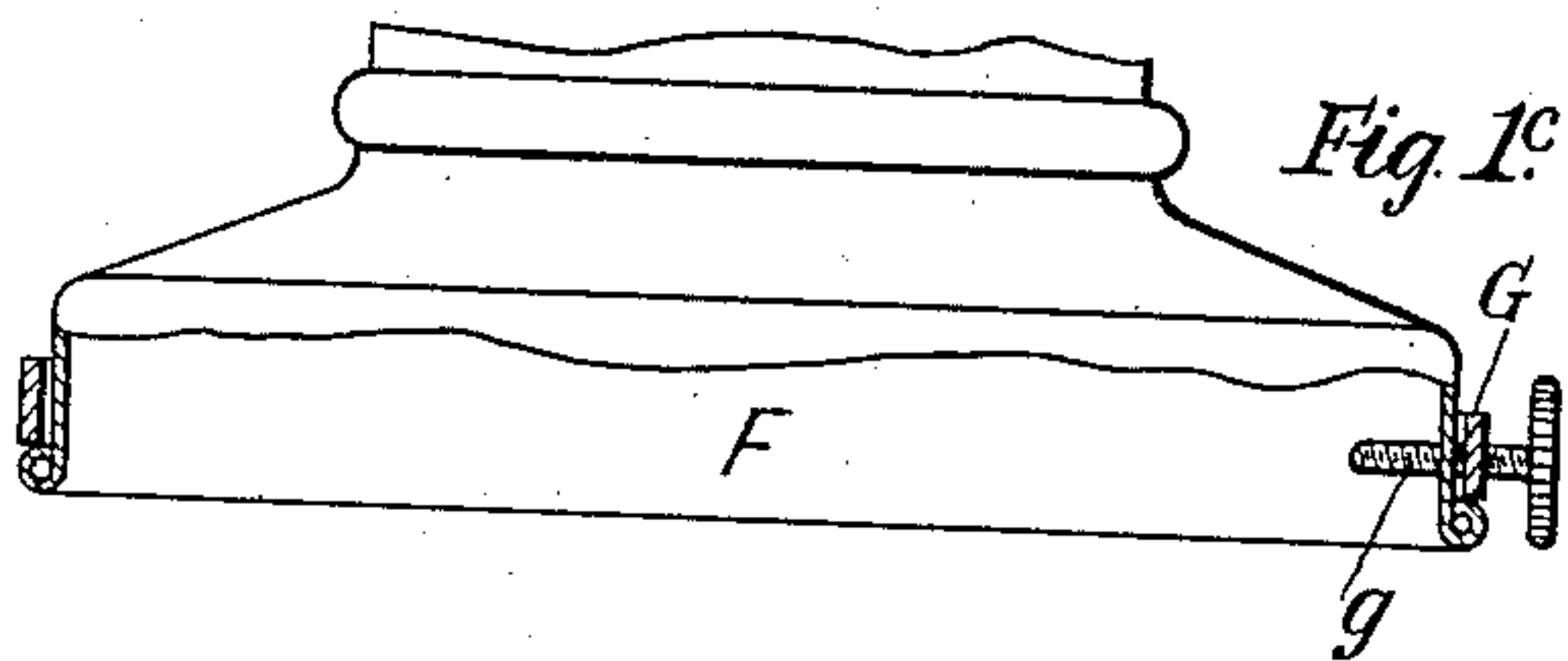
Inventors:

James Keith
George Keith
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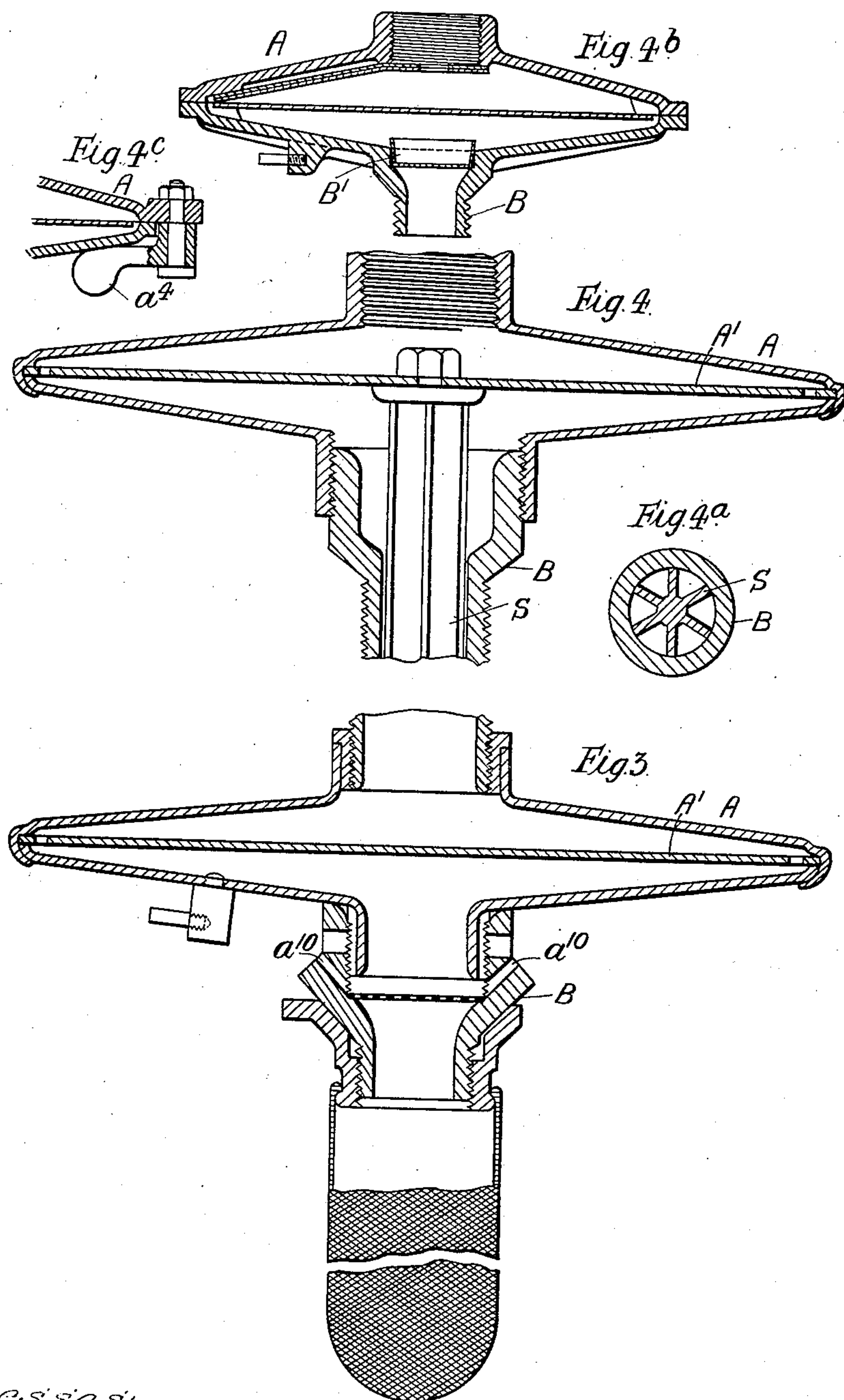
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UNITED STATES PATENT OFFICE.

JAMES KEITH AND GEORGE KEITH, OF LONDON, ENGLAND.

GAS-LAMP.

No. 917,876.

Specification of Letters Patent.

Patented April 13, 1909.

Application filed July 27, 1908. Serial No. 445,648.

To all whom it may concern:

Be it known that we, JAMES KEITH and GEORGE KEITH, subjects of the King of the United Kingdom of Great Britain and Ireland, and residing at London, England, have invented a certain new and useful Improvement in Gas-Lamps, of which the following is a specification.

This invention relates to improvements in gas lamps and more particularly to those used for high pressure gas lighting with inverted burners and it has for its primary object to provide a lamp having an improved form of heater in which the mixture of gas and air is heated as highly as desirable, and in conjunction with which is employed a heavy metallic nozzle connected to the heater which serves to convey away as much heat as possible from the tip and transfer it to the heater.

Further features of the invention appear from the following description.

In the accompanying drawings Figure 1 is a vertical section showing a lamp embodying the invention and adapted more especially for outside use. Fig. 1^a is a part plan of the inner and outer casings of the lamp, the top of the inner casing being removed. Fig. 1^b is a detail view showing the upper part of the burner so arranged that the injector nipple may be withdrawn from the top without the lamp being taken apart. Fig. 1^c is a part elevation part vertical section showing alternative means for supporting the lamp globe or globes. Fig. 2 is a vertical section showing a modified construction of lamp. Fig. 3 is a vertical section showing a slightly modified form of heater and nozzle. Figs. 4 and 4^a and Figs. 4^b and 4^c show modifications thereof. Figs. 5, 6, 7 and 8 show details hereinafter referred to.

Referring firstly to Fig. 1, the heater A is made substantially in the form of a hollow disk or double cone with a diaphragm A' between, said diaphragm being perforated at its edges at *a*. The heater is preferably made of aluminum, nickel or other suitable metal, which does not readily oxidize with heat, or is plated with some such metal. In this heater the mixture of gas and air is heated as highly as possible. To the said heater A is directly connected a heavy metallic nozzle B of good conducting material. The provision of a heavy nozzle, it may be mentioned, is not in itself new but

has been described in the specification of British Letters Patent No. 17584 of 1904. This nozzle is fitted with a removable gauze disk B' between the tip and lower portion of the heater A, as hereinafter more fully described. The nozzle may also be formed in one piece with the lower part of the heater.

A mantle ring C, carrying the mantle *c*, made of non-conducting material as usual, is screwed on to the nozzle to prevent the passage of flame between the two and thus prevent the extreme tip of the nozzle B from becoming too hot; or the nozzle itself may be formed with a comparatively heavy metallic lining provided on the outside with a close-fitting non-conductor to which any form of mantle or mantle ring can be attached in the usual way.

Special attention is called to the importance of using a heavy nozzle protected by a non-conductor in conjunction with the gas and air heater; it will be seen that the nozzle serves to convey heat to the heater, thus increasing the efficiency of the heater, while the heater on account of its large area coming into intimate contact with the incoming mixture serves to take away a large amount of heat from the nozzle.

The body of the lamp consists of a cylindrical outer casing D in which is fitted a box D' having two or more flat or concave sides *d'* not in contact with the cylinder D and provided with a closed bottom *d''*, said box D' having lateral openings *d²* direct to the outside at the parts which are in contact with the outer casing D. Said openings *d²* form inlets for the primary air. The whole structure is surmounted by a suitable cowl or cap which in the modification shown in Fig. 2 is preferably enameled with vitreous enamel in one piece with the body. The spaces *d³* (Fig. 1^a) at the sides between the inner box D' and the outer cylinder D form chimneys with outlets *d⁴* (Fig. 1) that discharge the waste products at a higher level than the primary air inlets *d²* aforesaid. To the lower portion of the outer casing D is attached a chamber F in which is located the heater A. If the entire outer casing is enameled, a metallic ring G (Fig. 1^c) may be slipped loosely over the outside of the chamber F and is fitted with a suitable number of screws *g* which project through clearance holes in the chamber F to support the globes and the reflectors; it is thus unnecessary to tap holes in any of the enameled parts.