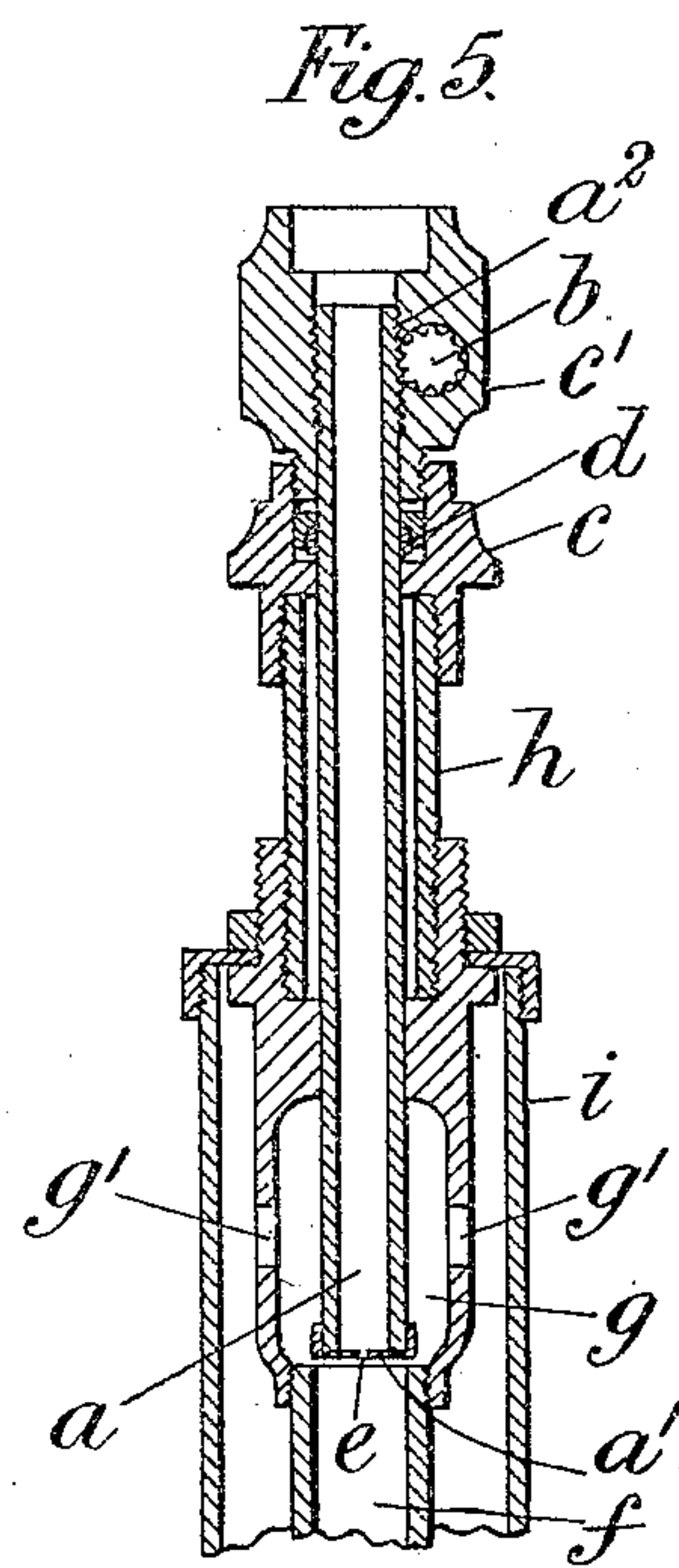
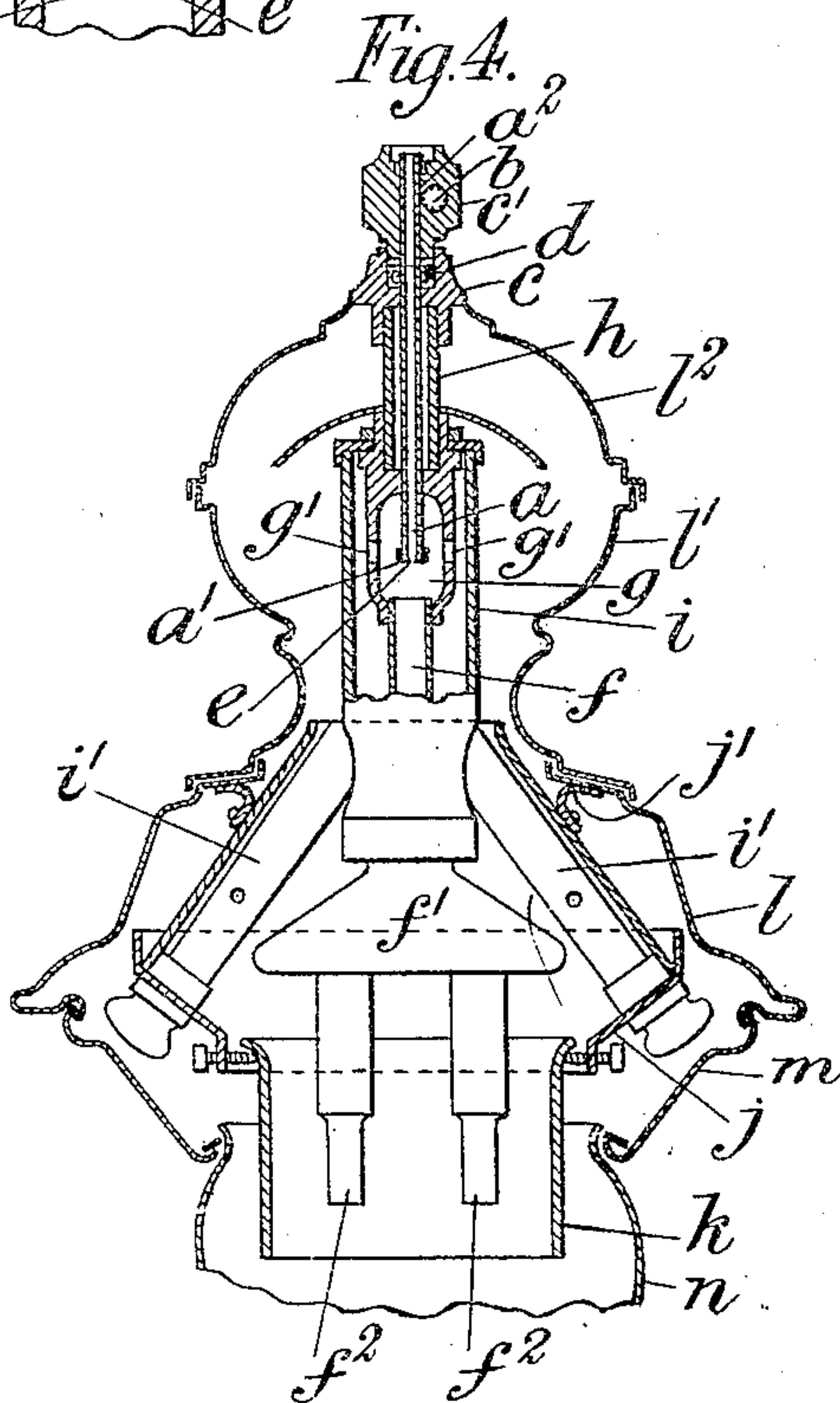
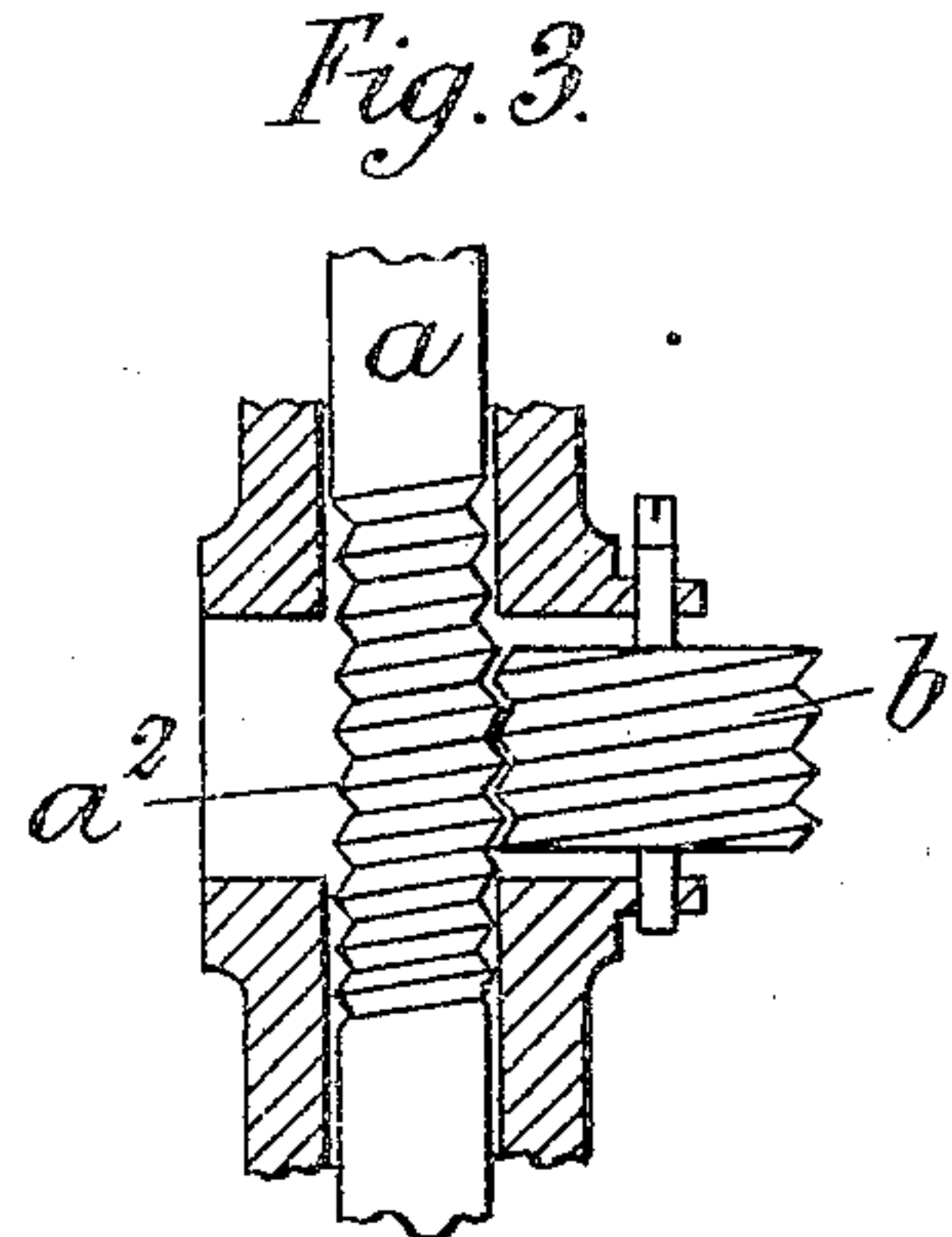
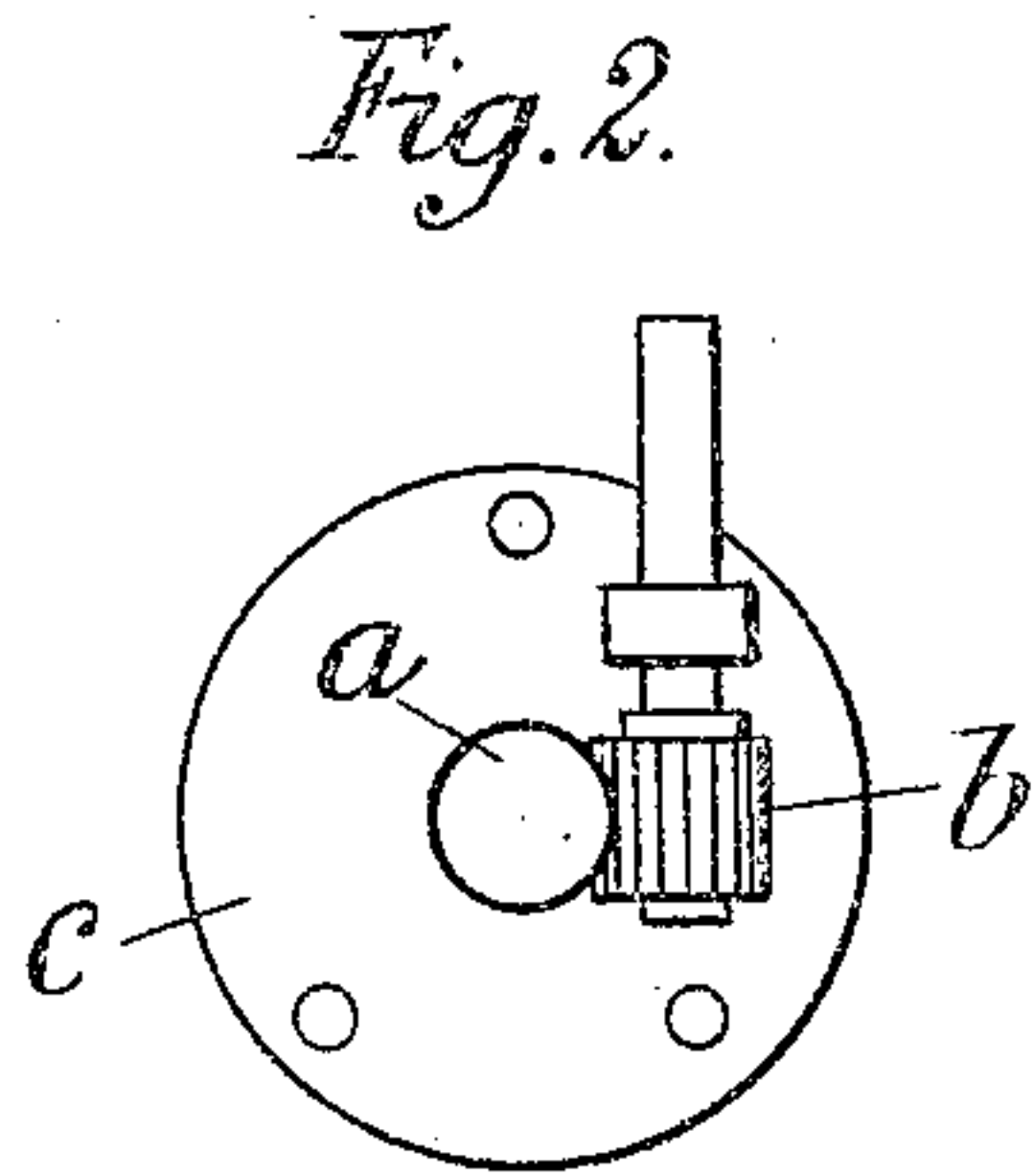
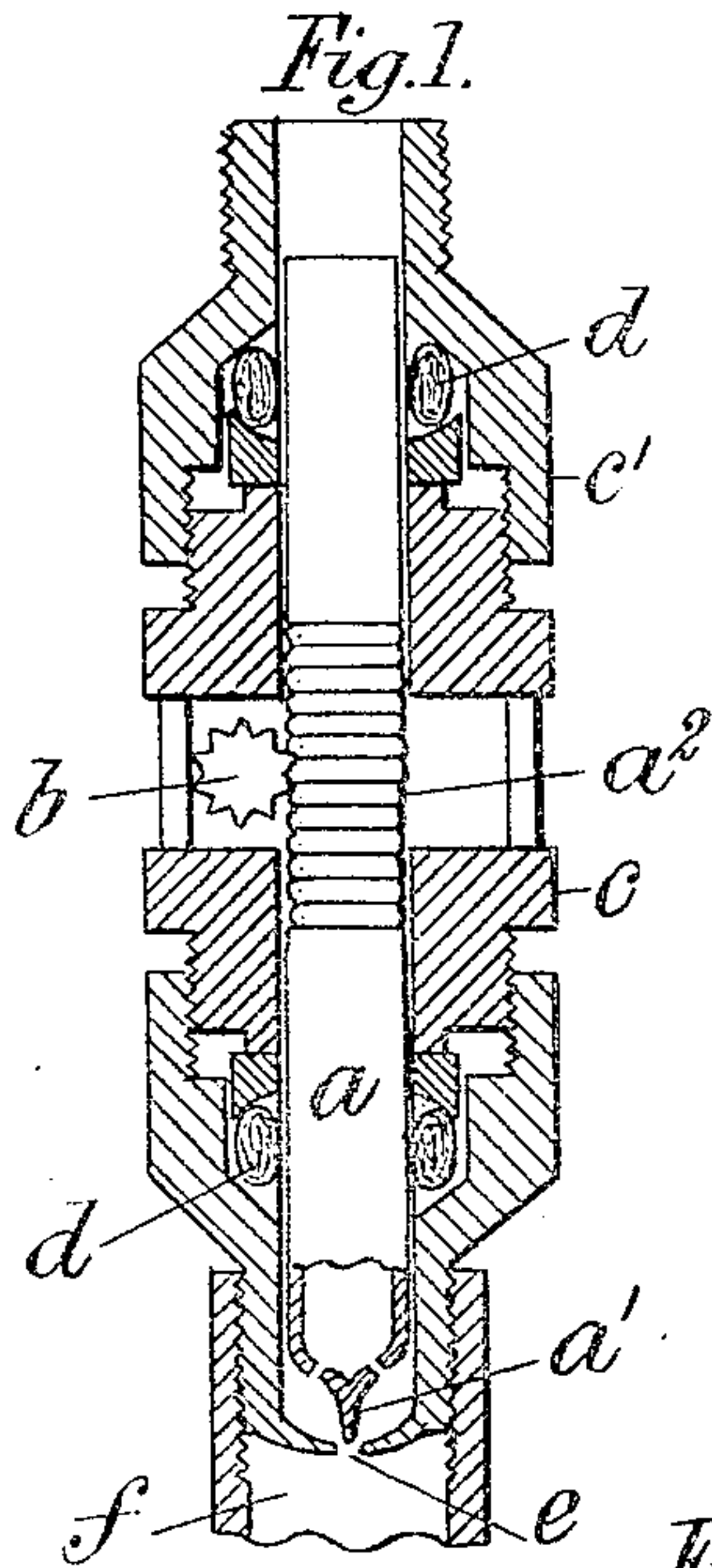


G. HELPS.  
GAS BURNER.

APPLICATION FILED SEPT. 4, 1909.

962,834.

Patented June 28, 1910.



Witnesses  
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# UNITED STATES PATENT OFFICE.

GEORGE HELPS, OF ANSLEY, ATHERSTONE, ENGLAND.

## GAS-BURNER.

962,834.

Specification of Letters Patent. Patented June 28, 1910.

Application filed September 4, 1909. Serial No. 516,257.

*To all whom it may concern:*

Be it known that I, GEORGE HELPS, a subject of the King of Great Britain, residing at Izons Croft, Ansley, Atherstone, England, civil engineer, have invented new and useful Improvements in Gas-Burners, of which the following is a specification.

According to this invention the tube which directly conveys gas from the gas supply pipe to the burner is provided with a valve and is capable of longitudinal movement for the purpose of opening or closing the valve.

The tube works through a stuffing box and is outwardly screw threaded, means such as a pinion being provided which gears with the screw thread for producing the longitudinal movement.

This invention allows the needle or other valve regulating the orifice of a gas nipple to be actuated from outside the lamp casing although the nipple itself may be a considerable distance from the power employed to actuate the needle or other valve. The nipple may be several inches from the pinion which actuates the needle working in it. Thus the working parts actuating the needle may be outside the lamp casing and out of the way of the heat and at the same time readily accessible to all requirements. When it is not required to use an adjustable nipple a long tube containing the nipple may work through a stuffing box into an air chamber in such a manner that it opens or closes the air space through which the air passes before it is injected into the burner tube and thus regulates the mixture of air and gas. Thus a fixed nipple may be used advantageously as against an adjustable nipple, as with a fixed nipple and the air adjustment referred to a better aeration is insured and the operation of adjustment more readily done as compared with burners in which both the nipple and the air are adjustable or when the gas nipple only is adjustable. The part which supports the tube may also support a tubular casing which surrounds the air chamber. The said casing is provided with outwardly radiating pipes which convey air from outside the lamp casing to the burner; the radiating pipes carry a flanged ring or the like which in its turn may support the lamp casing directly, or indirectly through another flanged ring. Thus the casing of the lamp

which may be in several parts may be supported without rivets or short bolts and nuts—a considerable advantage where enameled iron casings are used—and ready access be obtained to all parts of the burner. The flanged ring before referred to may also carry the chimneys, draft inducers or globes and be used for indoor purposes without any protecting casing.

My invention will be readily understood by reference to the accompanying drawings.

Figure 1 is a section showing the tube with its valve and the means for operating it. Fig. 2 is a plan of the top of the gland. Fig. 3 shows in section a modified method of raising the tube. Fig. 4 is a section showing the tube applied to an inverted incandescent gas lamp, and Fig. 5 shows some of the details in Fig. 4 to a larger scale.

In the drawings *a* is a tube which leads gas from the gas supply pipe, not shown in the drawings, to the burner; it carries a valve *a'* and is provided with a screw thread or rack *a<sup>2</sup>* on its exterior.

*b* is a pinion or the like which gears with *a<sup>2</sup>*.

*c* is a gland forming with the part *c'* and the packing *d* a stuffing box through which the tube *a* passes.

*e* is the gas nipple and *f* a tube which is either the burner tube or, if there be several burner tubes, the tube leading to the bulb carrying the burner tubes. Gas passes down through the tube *a* and out through the nipple *e* into the tube *f*.

In Figs. 4 and 5 the tube *a* opens into a chamber *g* provided with air inlets *g'*. This chamber carries the tube *f* which forms the seat for the valve *a'* and leads to a bulb *f'* carrying the burner tubes *f<sup>2</sup>* *f<sup>2</sup>*. The chamber is itself carried by a tube *h* which screws onto the stuffing box. *i* is a casing surrounding the chamber *g* and *i'* *i'* are pipes outwardly radiating from the same through which air passes inside the chamber *g*. The pipes *i'* *i'* carry a flanged ring *j* which supports the chimney *k* and either directly or indirectly through a second flanged ring *j'* the lamp casing formed of the three parts *l* *l'* *l<sup>2</sup>*. The part *l* carries the reflector *m* which carries the globe *n*.

When the tube *a* is moved downward the valve *a'* will be operated thus regulating the mixture delivered to the burner either



by directly regulating the flow of the gas as shown in Fig. 1 or as shown in Figs. 4 and 5 by regulating the flow of air..

What I claim is:—

5 1. In a gas lamp, the combination of a tube which directly conveys gas from the gas supply to the burner, a valve on the tube, means for moving the tube for the purpose of operating the valve, a tubular casing  
10 surrounding said tube and supported by the part which carries the tube, and air inlet pipes radiating outwardly from said tubular casing.

2. In a gas lamp, the combination of a  
15 tube which directly conveys gas from the gas supply to the burner, a valve on the tube, means for moving the tube for the purpose of operating the valve, a tubular casing surrounding said tube and supported by the  
20 part which carries the tube, air inlet pipes radiating outwardly from said tubular casing, and a flanged ring on said radiating pipes.

3. In a gas lamp, the combination of a  
25 tube which directly conveys gas from the gas supply to the burner, a stuffing box through which the tube passes, a valve on the tube, means for moving the tube for the purpose of operating the valve, a tubular casing sur-  
30 rounding said tube and supported by the

part which carries the tube, air inlet pipes radiating outwardly from said tubular casing, and a flanged ring on said radiating pipes.

4. In a gas lamp, the combination of a 35 tube which directly conveys gas from the gas supply to the burner, a valve on the tube, means for moving the tube for the purpose of operating the valve, a chamber having an inlet for air into which the tube opens, a  
40 tubular casing surrounding the chamber and supported by the part which carries the tube, air inlet pipes radiating outwardly from said tubular casing, and a flanged ring on  
45 said radiating pipes.

5. In an inverted gas lamp, the combination of a tube which directly conveys gas from the gas supply to the burner and which has a screw thread on the outside, a stuffing  
50 box through which the tube passes, a valve on the tube, a chamber having an inlet for air into which the tube opens, a valve seat at the end of the chamber, a lamp casing, and a pinion situated above the casing gearing  
55 with the screw thread on the outside of the tube for the purpose of operating the valve.

GEORGE HELPS.

Witnesses:

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