

No. 730,364.

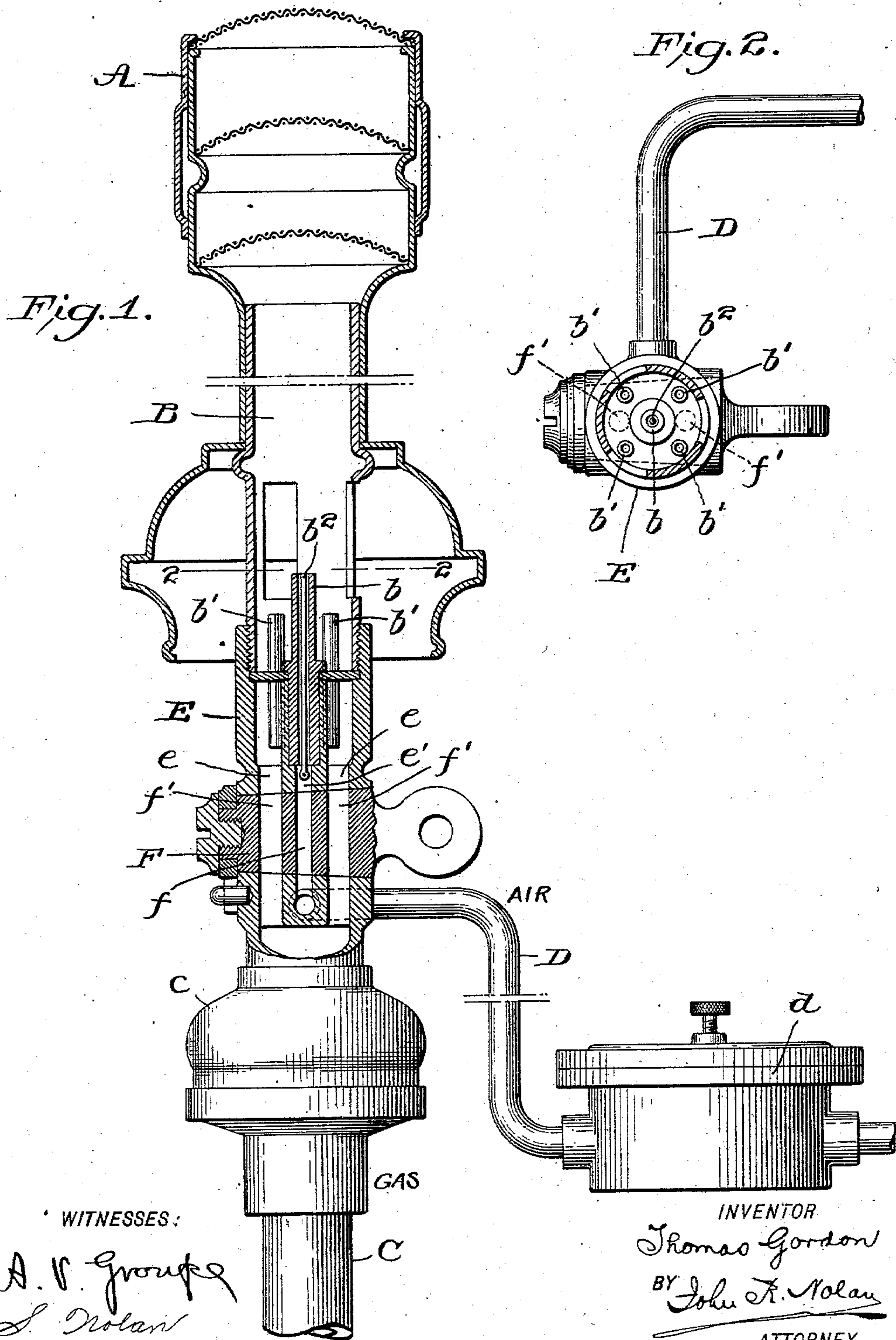
PATENTED JUNE 9, 1903.

T. GORDON.

# INCANDESCENT GAS LIGHTING APPARATUS.

APPLICATION FILED JULY 26, 1901.

NO MODEL.



THE MORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.



# UNITED STATES PATENT OFFICE.

THOMAS GORDON, OF PHILADELPHIA, PENNSYLVANIA.

## INCANDESCENT-GAS-LIGHTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 730,364, dated June 9, 1903.

Application filed July 26, 1901. Serial No. 69,787. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS GORDON, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Incandescent Gas-Lighting Apparatus, of which the following is a specification.

This invention relates to that class of incandescent gas-lighting apparatus in which compressed air and gas are commingled preparatory to their passage to and combustion at the burner, my object herein being to provide a simple and efficient construction whereby the supply of gas and air to the induction and mixing chamber may be nicely regulated and whereby an intimate commingling of the same may be effected.

To this end my invention, stated generally, comprises a novel construction and arrangement of the air and gas supply pipes and of a cock or valve device therefor, together with means for regulating the volume of gas and the pressure of the air delivered to the induction and mixing chamber, as will be hereinafter particularly described and claimed.

In the drawings, Figure 1 is a longitudinal section of a portion of a lamp embodying my invention. Fig. 2 is a transverse section, as on the line 2 2 of Fig. 1.

A represents the burner-head; B, the induction and mixing chamber below the same, and C D the gas and air supply pipes, respectively, having communication with the interior of the said chamber. These pipes are provided with automatic regulators *c d*, of any approved construction, whereby the volume of gas and the pressure of the air delivered to the induction-chamber may be nicely regulated to insure efficient results. I have discovered that by adjusting the gas-regulator to admit the gas below its normal pressure and the air above its normal pressure an intimate and efficient commingling of the air and gas is attained.

In the present instance the gas-supply pipe is screwed onto the lower end of a section E, which is screwed upon and depends from the body of the chamber B, and the air-supply pipe extends into the lower portion of said section. This section is provided with three

vertical ports, two, *e*, of which afford communication between the upper and lower portions of the section, while the other or central port, *e'*, is closed at its lower end and has lateral communication with the air-supply pipe. The upper end of the central port communicates with a tube *b*, leading into the induction and mixing chamber, while the upper portion of the section also communicates by means of tubes *b'* with said chamber, whereby when the ports are open the air and gas are permitted to flow into the chamber. Seated in the section E is a cock F, provided with three ports—to wit, a central port *f*, which is adapted to be moved into and out of register with the port *e'*, and two lateral ports *f'*, adapted to be correspondingly moved in respect to the ports *e*. Hence by manipulating this cock the supply of air and gas to the induction and mixing chamber may be nicely regulated.

I preferably arrange axially within the tube *b* a stem or pin *b<sup>2</sup>*, between which and the inner wall of the tube is formed an annular duct for the passage of the air from the supply-pipe to the chamber B, this duct being of just sufficient area to permit the ingress of a predetermined volume of air to the said chamber. When an ordinary tube of sufficient fineness for the passage of a proper quantity of air is employed, a disagreeable hissing sound is occasioned by the passage of the air therethrough; but when a larger tube with an annular air-duct therein is provided, as above described, the objectionable noise is effectually obviated.

By the use of tubes instead of simple orifices for the ingress of the gas to the induction and mixing chamber the hissing of the gas during its ingress to the latter is also overcome.

I claim—

1. In a gas-lighting apparatus, the combination with the induction and mixing chamber, of the section below the same provided with air and gas passages, the annular duct leading from the air-passage to the said chamber and having an open unobstructed outlet, the elongated gas-ingress tubes affording communication between the gas-passages and said chamber, an air-supply pipe communicating with the air-passages, a gas-supply pipe com-

communicating with the gas-passages, and a cock for controlling the said air and gas passages, substantially as described.

2. In a gas-lighting apparatus, the combination with an induction and mixing chamber, of a section below the same provided with an internal air-passage and a gas-passage surrounding the latter, an elongated tube arranged at the mouth of the air-passage, a pin  
10 arranged in said tube to form an annular duct therein for the passage of the air, elongated

tubes affording communication between the gas-passage and the induction or mixing chamber, and a cock for controlling the air and gas passages.

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

THOMAS GORDON.

Witnesses:

ANDREW V. GROUPE,  
SADIE NOLAN.