

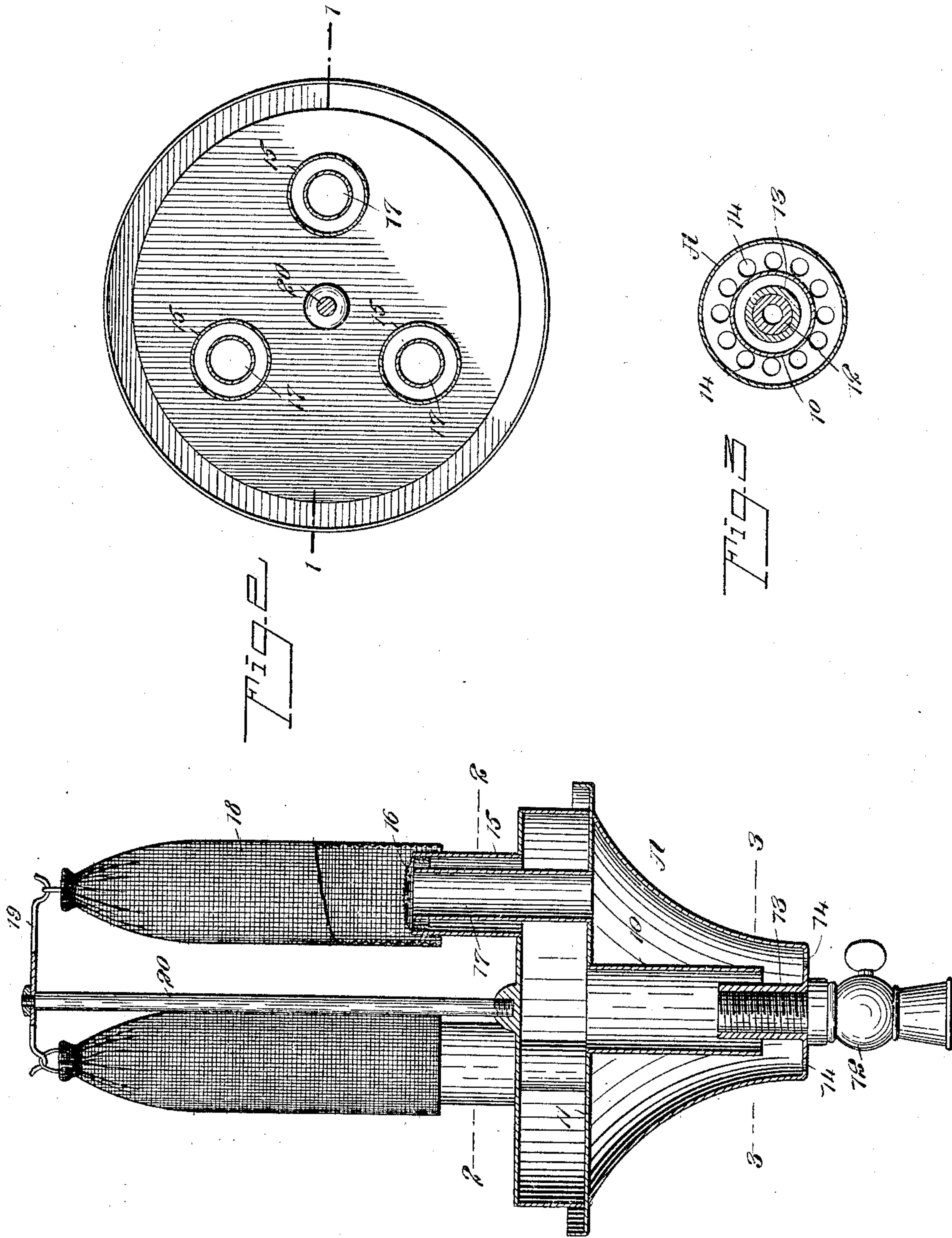
No. 682,527.

Patented Sept. 10, 1901.

J. J. BYRNES.
INCANDESCENT BURNER.

(Application filed May 21, 1901.)

(No Model.)



WITNESSES:
J. A. Proply
Frederick Ken

INVENTOR
James J. Byrnes
BY *Mum*
ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES J. BYRNES, OF BROOKLYN, NEW YORK.

INCANDESCENT BURNER.

SPECIFICATION forming part of Letters Patent No. 682,527, dated September 10, 1901.

Application filed May 21, 1901. Serial No. 61,205. (No model.)

To all whom it may concern:

Be it known that I, JAMES J. BYRNES, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Incandescent Burner, of which the following is a full, clear, and exact description.

The purpose of my invention is to provide a single or a multiple burner adapted to be used in connection with mantles and to so construct the burner that the air will be supplied in such manner as to cause the flame to engage with the mantle on all sides at its inner portion, and thus provide for a great brilliancy in illumination and an economic consumption of gas.

A further purpose of the invention is to construct such a burner in a very simple, durable, and economic manner and so that the burner when used in multiple need not be unduly large.

The invention consists in a novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical section taken practically on the line 1 1 of Fig. 2, a portion of one of the mantles being broken away. Fig. 2 is a horizontal section taken substantially on the line 2 2 of Fig. 1, and Fig. 3 is a section taken horizontally on the line 3 3 of Fig. 1.

The body A of the burner may be given any desired formation. Preferably, however, its lower portion is made to taper in a downward direction, as is illustrated in Fig. 1. A mixing-tube 10 is located at the central portion of the burner, being supported by a horizontal partition 11, as is also shown in Fig. 1, and the threaded portion of the gas-supply cock 12 is screwed into a sleeve 13, forming a portion of the bottom of the body of the burner, which sleeve extends up into the mixing-tube 10, and the said sleeve is of less diameter than the mixing-tube, so that an ample space is provided between the inner wall of the mixing-tube and the sleeve 13 for the admission of air, which enters the burner

through a series of apertures 14, produced in its bottom, as is shown in Figs. 1 and 3. At the top of the burner one or a series of burner-tubes 15 are located, being connected with the upper chamber formed by the partition 11, and this upper chamber may be termed a "gas-receiving" chamber, while the chamber in the body of the burner below the partition may be termed an "air-receiving" chamber. Each burner-tube 15 is provided with the usual wire-gauze 16 at its upper end, and an air-supply tube 17 is passed through each burner-tube 15, the air-supply tubes 17 extending through the partition 11 to the upper portion of the burner-tubes, and the air-supply tubes 17 are open at top and bottom, their bottom portions being in direct communication with the lower or air-receiving chamber of the said body A. A mantle 18 of any approved construction is provided for each burner-tube, and these mantles are supported by hangers 19, attached to an upright rod 20, secured at its bottom to the central upper portion of the body A of the burner, as is shown particularly in Fig. 1. Under this construction it will be observed that commingled air and gas pass up through the mixing-tube 10 into the upper chamber of the body A and into the spaces between the burner-tubes 15 and the air-tubes 17 within the burner-tubes, the gas being ignited at the top of the burner-tubes in the usual way. The air passing in volume from the lower or air chamber of the body A is conducted by the air-supply tubes 17 to the top of the burner-tubes and to the central portion of the mantles 18, forcing the combustible gas to the sides of the mantles in direct contact therewith, where said gas is burned and produces its illuminating power.

It will be observed that under this construction a mantle will be illuminated at all points of its surface and that there will not be the usual conical volume of light in the mantles, but that the light will be even at all sides of the mantles from practically the top to the bottom, and under such a construction a maximum of illuminating power is obtained with a minimum expenditure of gas.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In incandescent burners, a body-casing

having an apertured bottom, a partition dividing the body-casing into an upper gas-receiving chamber and a lower air-receiving chamber, a mixing-tube within the air-receiving chamber, the bottom of which mixing-tube is above the perforations in the body-casing, the top extending through the said partition, a gas-supply pipe passed through the body-casing and into the mixing-tube, a burner-tube connected with the upper or gas-receiving chamber of the body-casing, and an air-supply tube open at both ends, extending the length of the burner-tube and through the partition, for the purpose described.

2. In incandescent burners, the combination, with a body provided with an apertured bottom for the admission of air, a gas-supply pipe leading into the said body, a partition

at the upper portion of the body, a mixing-tube within the body, adapted for the reception of gas and air, which mixing-tube passes through the said partition, of a burner-tube located upon the body in communication with the space above the partition, an auxiliary tube within the burner-tube, of less diameter than the burner-tube, which auxiliary tube extends to the top of the burner-tube and through the said partition, said auxiliary tube being open at the top and at the bottom, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES J. BYRNES.

Witnesses:

JOSEPH A. COYLE,

EDWARD J. CULLEN.