

No. 722,147.

PATENTED MAR. 3, 1903.

T. J. F. RYLAND.
BURNER FOR INCANDESCENT GAS LIGHTING.

APPLICATION FILED DEC. 12, 1902.

NO MODEL.

FIG 1

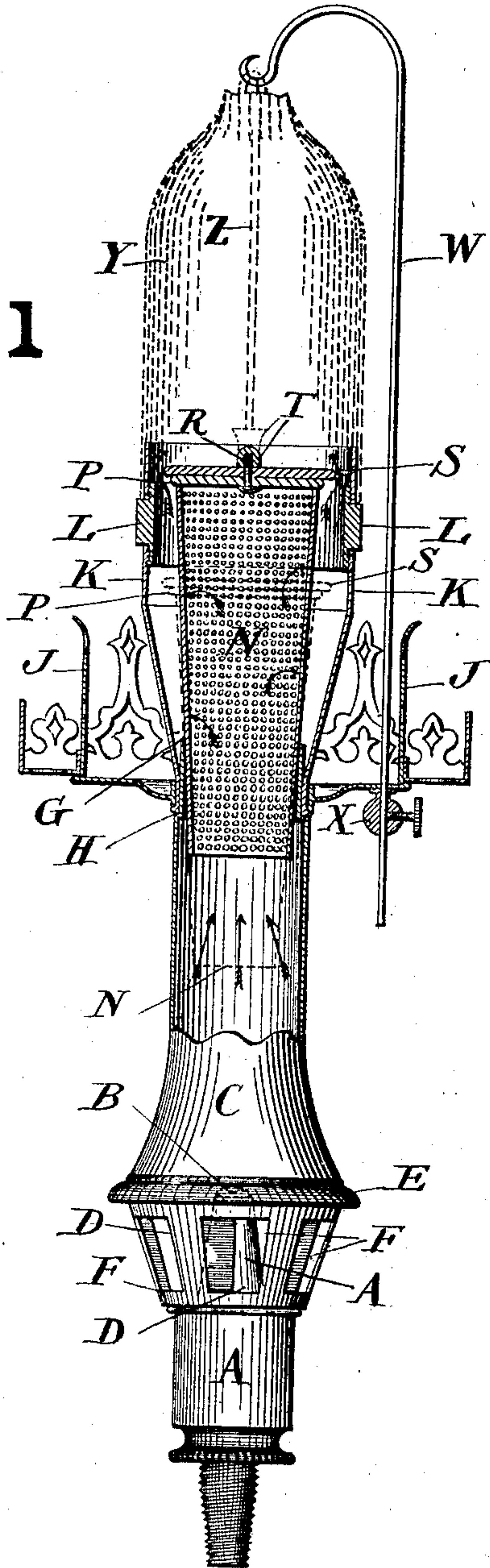
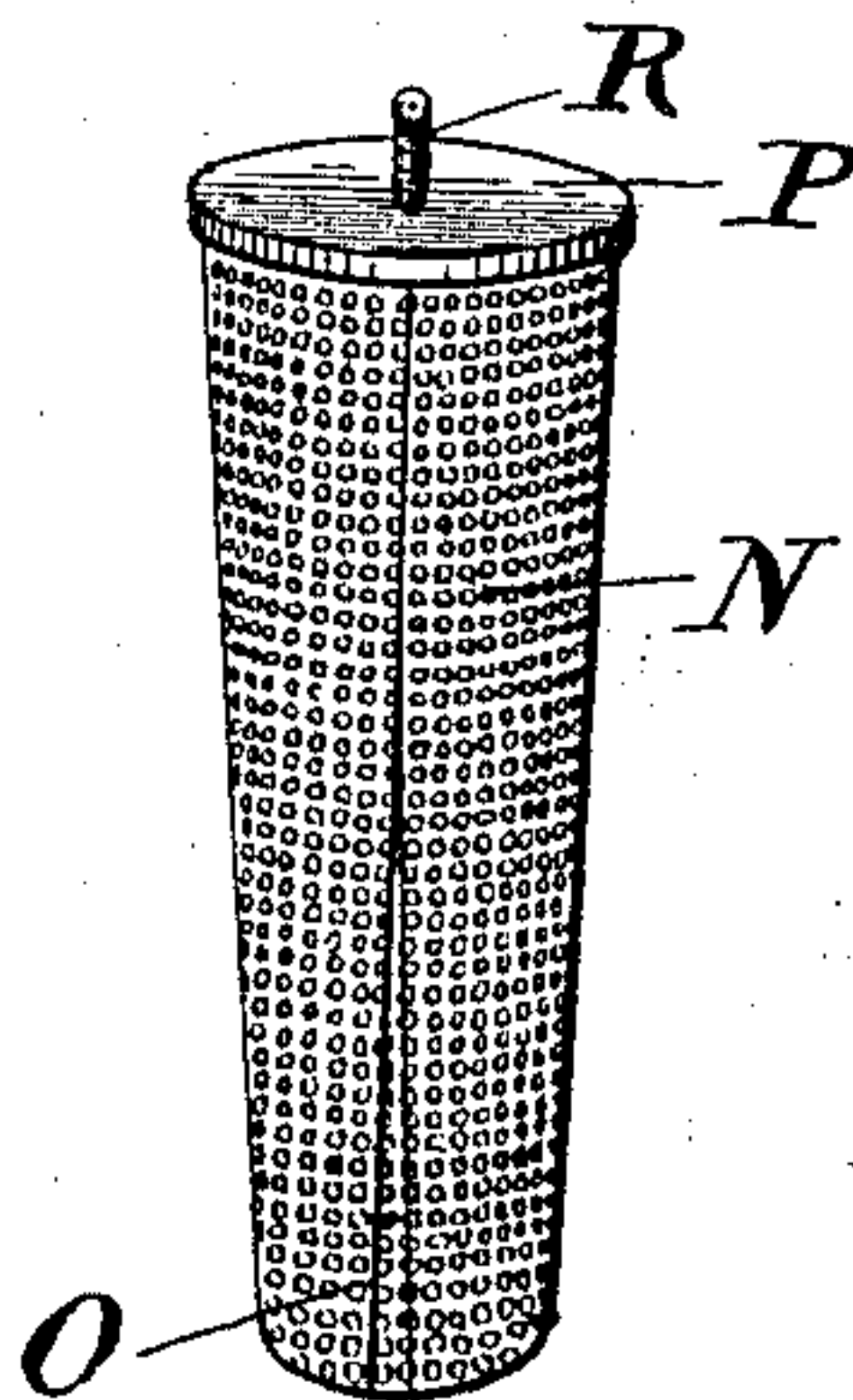


FIG 2



WITNESSES

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THOMAS JAMES FRANCIS RYLAND, OF LONDON, ENGLAND.

BURNER FOR INCANDESCENT GAS-LIGHTING.

SPECIFICATION forming part of Letters Patent No. 722,147, dated March 3, 1903.

Application filed December 12, 1902. Serial No. 134,993. (No model.)

To all whom it may concern:

Be it known that I, THOMAS JAMES FRANCIS RYLAND, a subject of His Majesty the King of Great Britain, and a resident of 51 Coldharbour Lane, Camberwell, London, S. E., England, have invented certain new and useful Improvements in Burners for Incandescent Gas-Lighting, (for which I have made application for patent in Great Britain, No. 10,840, dated May 12, 1902,) of which the following is a specification.

My invention has reference to gas-burners, more particularly such as are used for incandescent lighting; and it consists of certain improvements upon those hitherto made and used whereby I effect a greater economy of the gas consumed relatively to the candle-power obtained by combustion of same.

In order that my invention and the manner of its use may be the better understood, I have hereunto appended a sheet of drawings, of which—

Figure 1 is a vertical central section of a complete burner according to my invention, while Fig. 2 is a perspective view of the internal perforated cylinder or inverted cone forming part of my said invention.

In carrying my invention into effect I produce of any suitable metal, preferably lacquered brass, a gas nozzle or nipple A, adapted for fixation to any kind of gas-fitting in the usual way. The said nipple has one or any number of holes B formed in the crown thereof for the passage of gas, any or all of which may be countersunk or otherwise upon the upper or lower or upper and lower surfaces. The said nipple is arranged to receive and hold a metallic device C of any desired shape or configuration, but for preference such as that shown in Fig. 1, the said device operating as and hereinafter called the "mixing-chamber," the lower end of which has any number of apertures D for the inlet of air, which said holes may be covered by a rotating case E, having holes F corresponding in size and number to the apertures D, and such case may be used for partially closing the apertures D for regulating such inlet of air. The upper end of C terminates with a mouth G and has an external annular ridge H for carrying a chimney-gallery J in the usual way. The said chimney-gallery has a central hollow chamber K,

the lower open end of which fits upon the mouth of G, while its upper and larger open end is fitted with a ring L of any suitable non-conducting material, but preferably steatite, this being surmounted by a nosing M in alinement with the mouth of K.

Within the hollow chamber K, I place the device Fig. 2, which consists of a cylinder N, of any suitable metal capable of withstanding the heat to which it is exposed, the said cylinder being perforated all over with very small holes, as shown, and provided with a slit or opening O and inclosed at its upper end by a crown-piece P, provided with an upright threaded stud R for the reception of a spreader S, retained in position by a nut T, Fig. 1.

The gallery J may be arranged to carry a rod W, the lower end of which passes through a lug X, provided with a set-screw adapted to impinge upon the rod W and secure this in position at any height necessary for the proper incandescence of the mantle Y, supported upon the hooked upper end of the rod W.

The cylinder N is somewhat larger in cross-sectional diameter than the diameter of the mouth G of the mixing-chamber C; but by reason of the split O in N the lower end of this can be reduced in cross-sectional diameter by overlapping the two edges of the said split, which causes the said cylinder to take the form of an inverted cone, as in Fig. 2, which permits the lower end of N to be inserted within the mouth of C.

The gas exuding through the nipple B would enter the chamber C, the latter receiving its proper quantum of air through the apertures D, regulated by the rotating case E. The said air and gas becoming mixed in the chamber C would rise, as indicated by the lower arrows, and enter the lower end of the coned cylinder N and would exude therefrom through such of the perforations therein as would be above the mouth G of the chambers C, as indicated by the lower curved arrows in Fig. 1, from which point the said combustible mixture would rise and pass upwardly over the edges of the spreader S, as indicated by the upper curved arrows in Fig. 1, at which point it may be ignited, and the flame would impinge upon the lower edge of

the mantle Y and render this incandescent, and when the lower edge of the said mantle becomes worn or fringed, as usually obtains after lengthy wear, the said mantle may be
 5 lowered by the adjustment of the rod W, so that the lower end of the mantle may always be in contact with the flame, which provides that its brilliancy is never lessened by reason of a gap between the flame and the mantle.
 10 It will thus be understood that the quantity of the combustible mixture presented for ignition is regulated by the number of perforations in the coned cylinder N exposed above the mouth G of the mixing-chamber C, and
 15 such number of perforations exposed may be regulated by the extent to which the said coned cylinder is pushed down into the mouth G, as indicated by the dotted outline of same in Fig. 1, and by these means the consump-
 20 tion of gas may be regulated to exactly that needed for obtaining the best light without waste and without the roar and hissing noise that usually obtains when the supply of gas mixture exceeds that necessary for perfect
 25 combustion; hence the attainment of the object of my invention.

In cases where the burner may not be provided with the rod W the nut T may be extended in size to form a socket for the usual
 30 mantle-crutch Z, as indicated by dotted outline in Fig. 1, and where a by-pass is provided the conduit-tube from this may pass up through the mixing-chamber C, the crown P, and spreader S of the coned cylinder N, the
 35 upper end of which said conduit-tube may

have a male thread formed thereon for the reception of the nut T.

Having now fully described my invention and the manner of carrying same into effect, what I claim, and desire to secure by Letters
 40 Patent, is—

1. The improved burner for incandescent gas-lighting consisting of the combination of a mixing-chamber C, with air-inlets D, the
 45 latter controlled by a casing E, having perforation F, a gallery J mounted upon the said chamber and provided with an adjustable mantle-supporting rod W, and chamber K, the latter having a non-conducting ring L, and nosing M, a perforated cylinder N, slitted
 50 vertically, crown P, threaded stud R, spreader S and nut T, said cylinder being adjustable vertically within the mouth of the mixing-chamber, substantially as and for the purposes herein described and shown by the
 55 drawings.

2. In combination with a mixing-chamber C, a perforated cylinder located in the mouth of said chamber and slitted vertically where-
 60 by it is capable of being reduced in diameter and rendered vertically adjustable in said mouth, the upper end of the said cylinder being closed and a mantle surmounting said cylinder, substantially as described.

In witness whereof I have hereunto set my
 65 hand in presence of two witnesses.

THOMAS JAMES FRANCIS RYLAND.

Witnesses:

HENRY CONRAD HEIDE,
 GEORGE THOMAS HYDE.