(No Model.)

J. MACTEAR.

INCANDESCENT GAS BURNER.

No. 378,699. Patented Feb. 28, 1888.

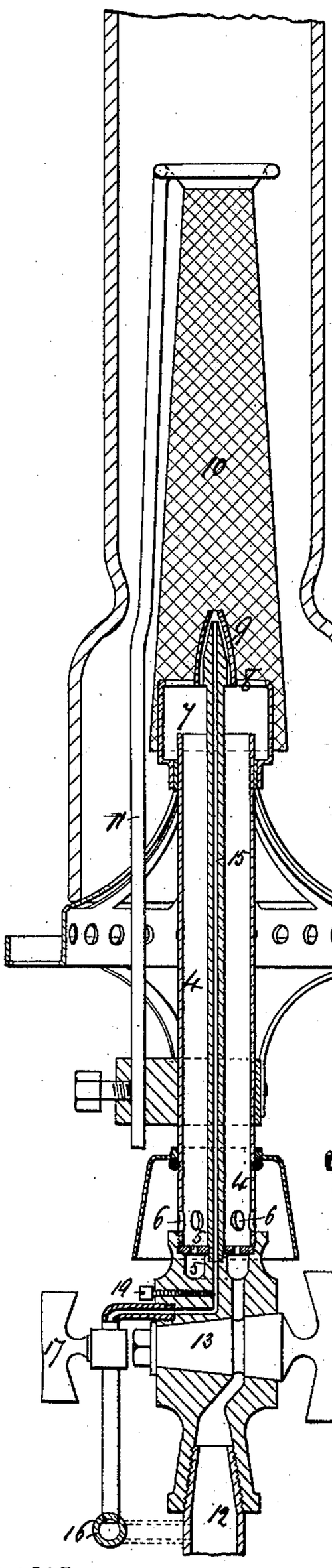

FIG. 1.

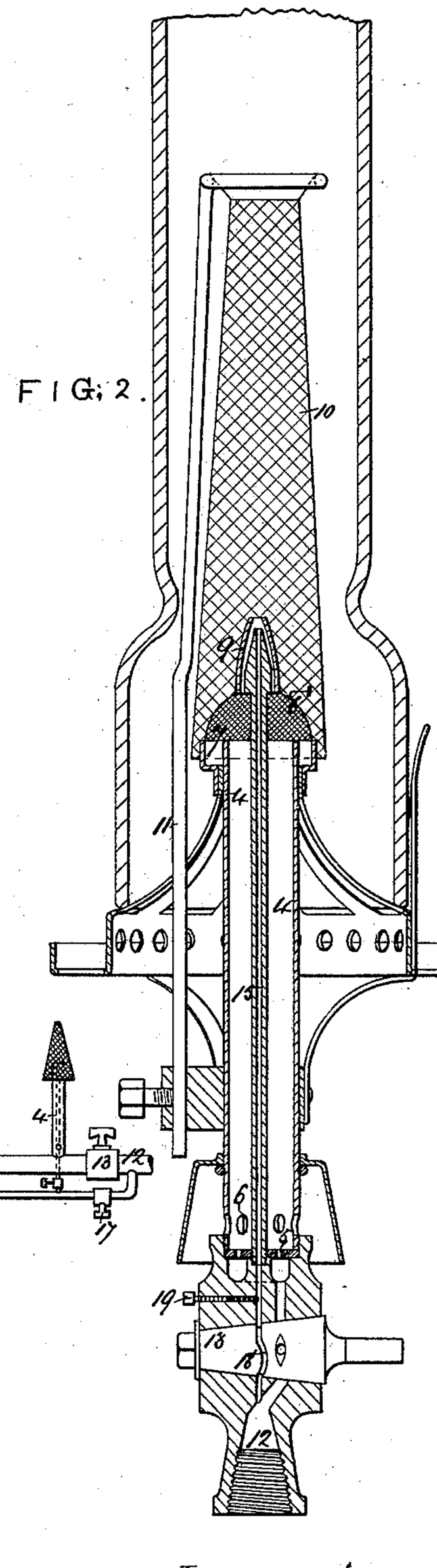

FIG. 2.

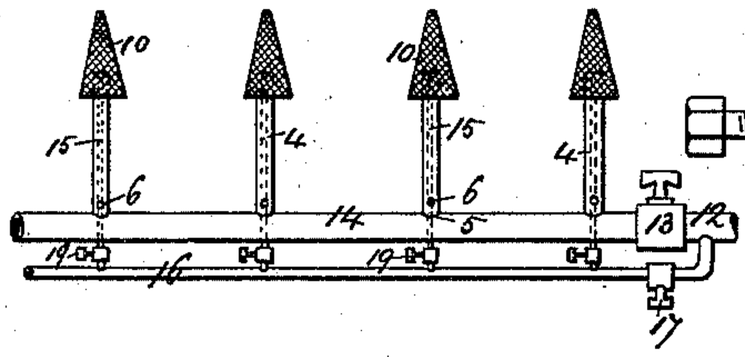

FIG. 3.

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UNITED STATES PATENT OFFICE.

JAMES MACTEAR, OF WESTMINSTER, COUNTY OF MIDDLESEX, ENGLAND.

INCANDESCENT GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 378,699, dated February 28, 1888.

Application filed May 19, 1887. Serial No. 238,744. (No model.) Patented in England April 12, 1887, No. 5,322.

To all whom it may concern:

Be it known that I, JAMES MACTEAR, a subject of the Queen of Great Britain and Ireland, and a resident of Westminster, county of Middlesex, England, chemical expert and engineer, have invented certain Improvements in Incandescent Gas-Burners, (for which I have filed an application for Letters Patent in Great Britain on the 12th day of April, 1887, No. 5,322,) of which the following is a specification.

This invention relates to the system of gas-lighting in which the luminosity is dependent upon the incandescence of a suitable refractory body, with which a hood, cap, or mantle made of a fine fabric is impregnated and which is exposed to and heated by the gaseous flame issuing from a burner of the general construction hereinafter described, the object of the invention being to combine with such burner, or with any connected series thereof, improved means of automatically igniting the gaseous mixture issuing therefrom, so as to obviate the necessity of separately igniting each light, as effected at present, and the danger of shattering such incandescent material by the slight explosion which ensues consequent upon the ignition of the gaseous mixture as at present effected.

To this end the invention consists, essentially, in the application to or combination with such burner or burners of the improved means herein described for leading a separate supply of gas, as a pilot jet or jets, to a point centrally of the outlet of the burner, or of each burner of a series thereof, from an independent pipe under independent control, or from the main supplying the gas burner or burners, being in such case either under the control of the cock controlling the supply of gas to the air or mixing chamber of the burner or burners, so that the jet or jets may be lowered or turned off as the ordinary supply to the burner or burners is turned on and after the gaseous mixture issuing from the latter has been ignited thereby, and so that the jet or jets may be turned more fully on, or, if turned off, may be turned on and ignited from the burner or burners as the supply to the latter is turned off, or provided with its own tap or controlling device, so that it may be turned up or down or out, if and as may be desired, so that when once lighted such jet or jets will or may for as long as required remain ready to serve its or their intended purpose immediately the supply is turned onto the burner or burners, separate provision being made in each case for independently regulating each pilot-jet, as hereinafter described.

On the accompanying drawings, Figures 1 and 2 represent in sectional elevation gas-burning devices constructed and adapted in accordance with the present improvements. Fig. 3 represents a general view.

4 represents an elongated mixing-tube, into which gas and air, respectively, enter at 5 and 6, the flow of gas inducing a following of air in a manner usual in Bunsen burners.

7 represents the outlet of the burner, which is formed with a series of radial openings, 8, Fig. 1, or with wire-gauze, 8′, Fig. 2, at its top part, through which the gaseous mixture is emitted and where it is ignited, being deflected by a central cone, 9, against a surrounding or superposed refractory hood, cap, or mantle, 10, which is or may be supported by the rod 11, or in any other suitable manner.

The supply of gas to the burner is derived from a main, 12, and is regulated by a cock, 13, (shown in Figs. 1 and 2 on the accompanying drawings,) in immediate connection with the mixing-chamber of one burner, though, as will be understood from Fig. 3, it may be used to control the supply of gas to an intermediate tube, 14, supplying a series of burners.

15 represents pipes of small bore, of which one is provided for each burner for the purpose of leading the said separate supply of gas to the pilot-jet thereof, and which pipe passes through the mixing-chamber of the burner and projects into the cone 9, which is hollowed for the purpose of emitting the said pilot-jet of gas or flame, and serves as a guard thereto. Each of such pipes 15 may lead from an independent supply-pipe, 16, or may obtain its supply from the main 12, supplying the burner or burners, which pipe 16 may be provided with a cock, 17, so that the gas-supply to the jet or jets may be regulated irrespective of the manipulation of the supply to the burner or burners, or may be under the control of the

cock 13, (*vide* Fig. 2,) the cock in such case being provided with an additional by-pass, 18, preferably of a curvilinear formation, so as to let more or less gas pass in accordance with its position, or being otherwise equivalently formed, so that the gas-supply to the burner or burners and to the pilot jet or jets may be controlled or manipulated by the same cock, 13; or the supply to the jet or jets may pass through an additional throughway in the cock 13 without being manipulated thereby. In each case provision is also made, by means of a screw or like arrangement, 19, for separately controlling the gas-supply to each separate pilot-jet.

I claim as my invention—

1. An incandescent gas-burner comprising an elongated mixing-chamber having gas and air inlets and having an outlet near its top, a refractory cap, 10, over the outlet, a hollow cone, 9, at the center of the outlet, and a gas-supply tube, 15, passing centrally through the chamber and burner and cone, all substantially as described.

2. An incandescent gas-burner comprising an elongated mixing-chamber, 4, having gas and air inlets and having an outlet near its top, a refractory cap, 10, over the outlet, hollow cone 9 at the center of the outlet, a gas-supply tube, 15, passing centrally through the chamber 4 and burner and cone, and a cock controlling the gas-inlets for both mixing-chamber and tube 15, all substantially as described.

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

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