

No. 660,933.

Patented Oct. 30, 1900.

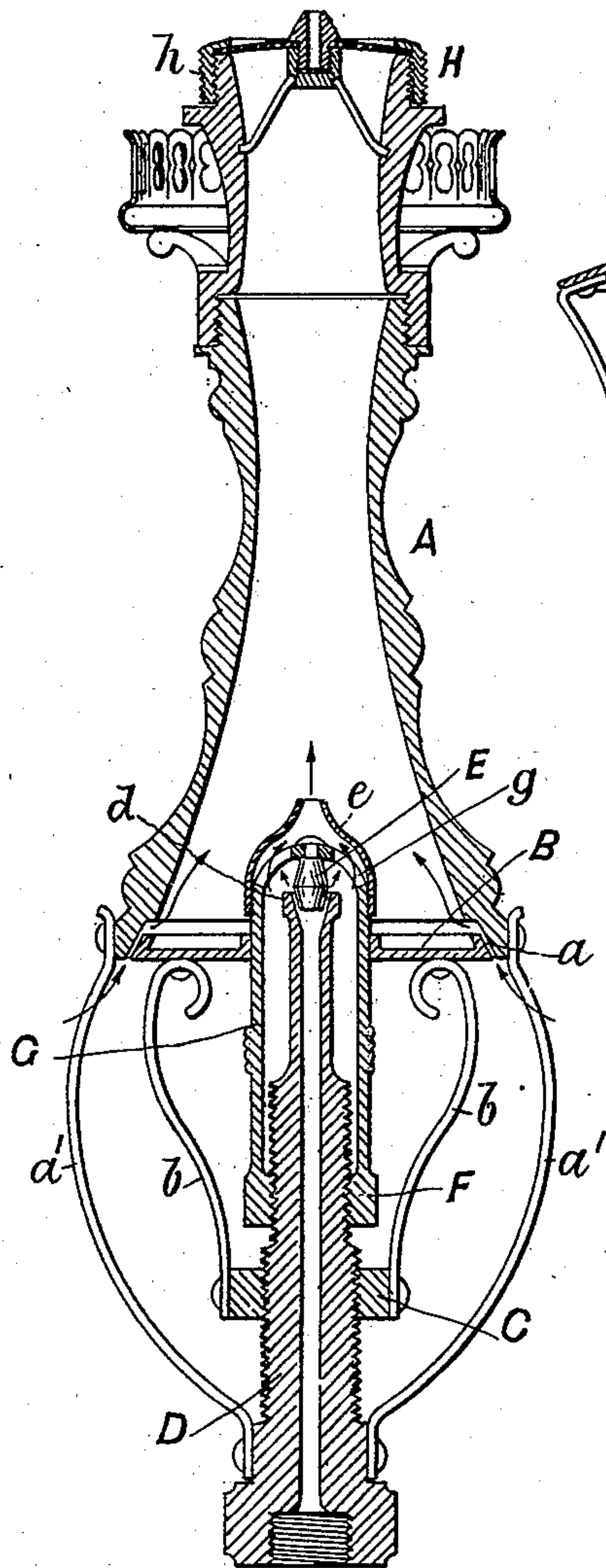
T. E. SINNBERG.

GAS BURNER.

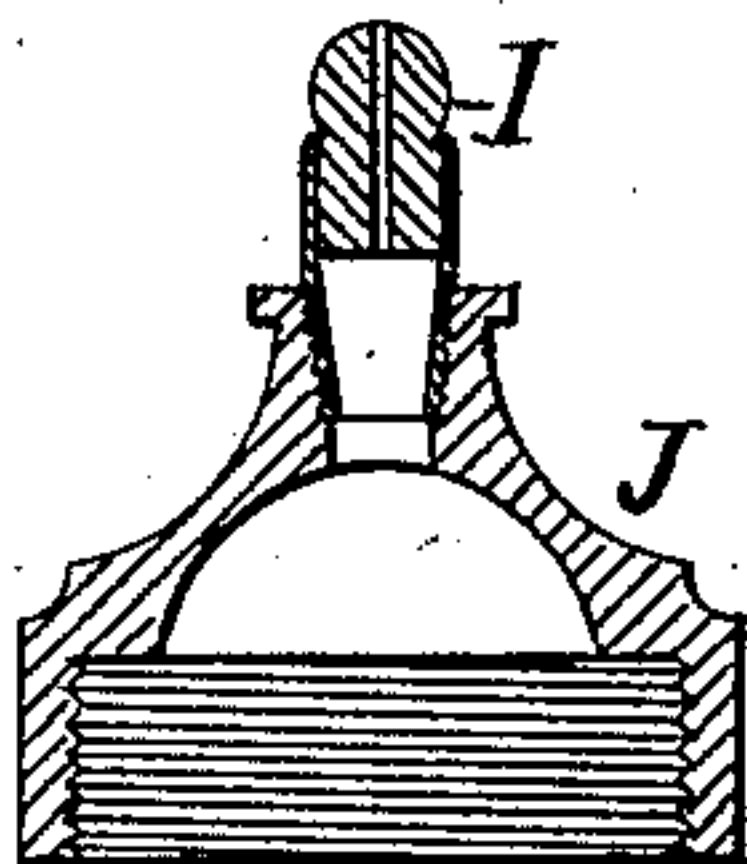
(Application filed Apr. 21, 1900.)

(No Model.)

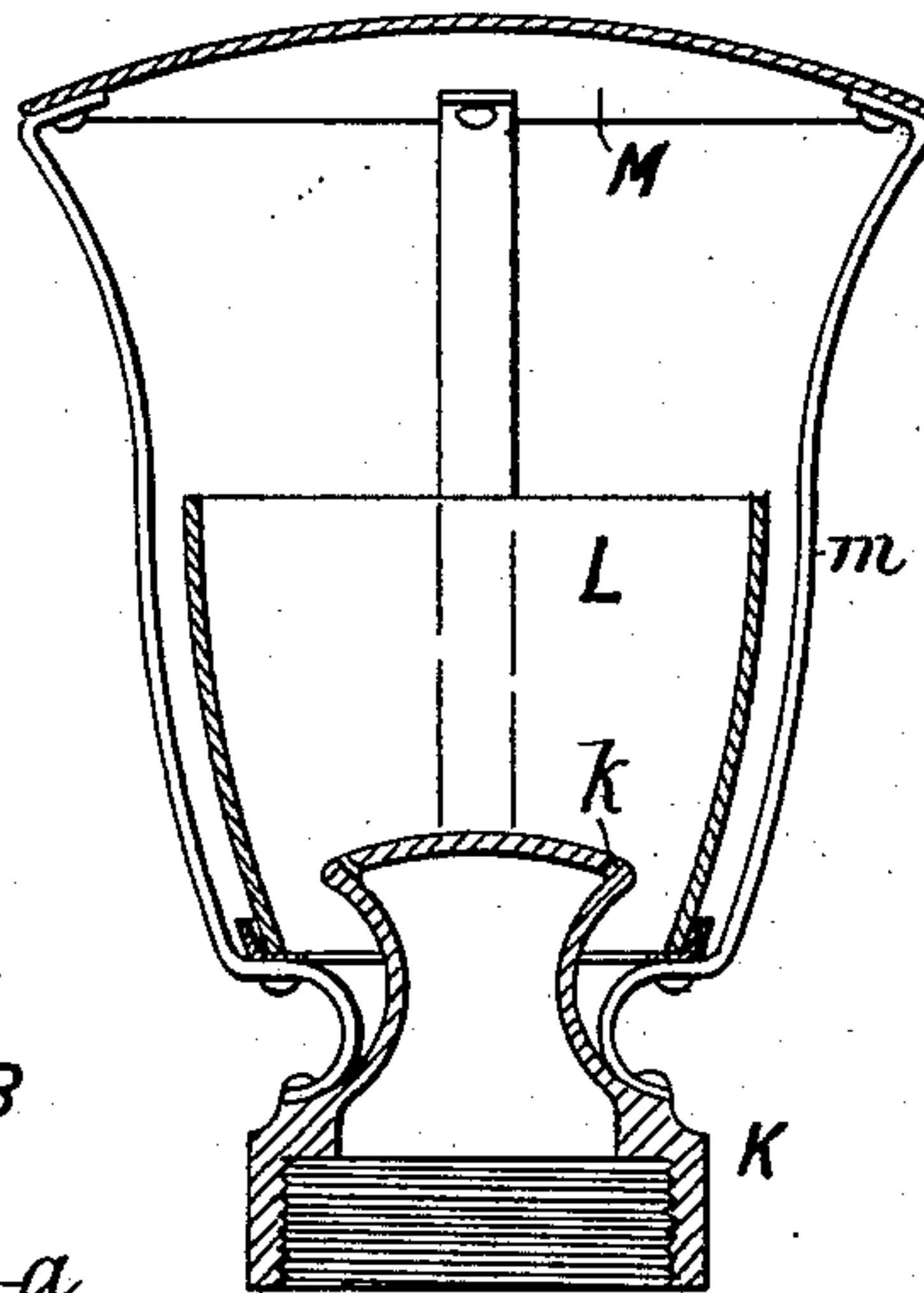
F / G . / .




F 1 Q.2.



F / G.3.



Inventor:
Theodore E. Sinnberg.

By 
Attorneys.

Witnesses:

Julius Lutz.
J. W. Manaford

UNITED STATES PATENT OFFICE.

THEODORE ELIAS SINNBERG, OF LONDON, ENGLAND.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 660,933, dated October 30, 1900.

Application filed April 21, 1900. Serial No. 13,722. (No model.)

To all whom it may concern:

Be it known that I, THEODORE ELIAS SINNBERG, engineer, a subject of the Emperor of Russia, and a resident of 54 Vicarage road, 5 Camberwell, London, England, have invented new and useful Improvements in Gas-Burners, of which the following is a specification.

My invention relates to improvements in atmospheric gas-burners used for incandescent lighting, and has for its object to enable the gas-supply and air-supply to be regulated both absolutely and also relatively to one another, so as to secure the best possible result in illumination.

15 The invention has also for its object to enable an ordinary luminous flame to be temporarily obtained without removing the atmospheric burners should the incandescent mantle become unserviceable when a new one is not 20 at hand for the purpose of renewal.

The invention consists in the particular construction and arrangement of parts, as hereinafter fully described, and pointed out in the claims.

25 Reference is to be had to the accompanying drawings, forming part of this specification, wherein—

Figure 1 is an axial vertical section of a complete atmospheric burner provided with 30 independent air and gas valves. Figs. 2 and 3 show axial sections of two forms of burner attachment adapted to be fitted on the head of the incandescent burner for burning gas without previous admixture of air.

35 According to my invention the lower end of the mixing-tube A, wherein the streams of gas and air are intimately mingled on their way to the ignition-orifice, forms the seat for a disk valve B, mounted upon a nut C, screwing upon a threaded part of the gas-supply 40 tube D, so as to be capable of being raised or lowered at will for the purpose of regulating the admission of air by varying the area of the annular opening *a* between the edge of the valve and its seat in the bottom of the 45 mixing-tube A. The upper end *d* of the gas-supply tube D is not closed, as usual, by a perforated diaphragm, (usually called an "injector,") but is open and adapted to form the 50 seat for a conical valve E, whereby the area of the gas-emission aperture may be varied

at will, said valve E being for this purpose carried on the upper end of a tube G, passing through the disk valve B and provided with a nut F, screwing upon the upper part of the 55 gas-supply tube D, the arrangement being such that the nuts C and F are both readily accessible for purposes of independent adjustment of the valves B and E.

The valve E depends from the center of the 60 dome-shaped upper end of the tube G, which is perforated, as at *g*, to permit the exit of the gas, which is emitted beneath an upwardly-convergent nozzle *e*, fitted over the upper end of the tube G for the purpose of directing the 65 issuing gas in the form of a jet upwardly and axially through the mixing-tube A, so as to produce by induction a current of air through the air-valve opening *a*. The tube G is cylindrical, and the disk valve B makes a work- 70 ing fit about it, so that no air can enter the tube A between the valve B and tube G. The disk valve B is connected with the nut C by means of spider-arms *b*, affording free access to the tube G for the purpose of effecting the 75 adjustment of the valve E, the mixing-tube A being likewise supported by spider-arms *a'*, attached to the lower end of the gas-supply tube D.

By the above-described construction the 80 burner can be readily adjusted whenever necessary without removal from the gas-fitting to suit any pressure of gas, thus enabling the best possible illuminating effect to be obtained from the mantle and enabling what is 85 known as "intensified gas-lighting" to be obtained with gas of the ordinary low pressure without the employment of a compressor. By this construction also the air-supply may be 90 entirely shut off by closing the valve B, so that if the mantle is broken and another is not available the gas alone may be burned by fitting on the head H of the burner one or other of the burners shown in Figs. 2 and 3.

The burner shown in Fig. 2 is an ordinary 95 bat's-wing or fish-tail nipple I, carried by a cap J, adapted to screw onto the head H of the mixing-tube A, while the burner shown in Fig. 3 is also a cap K, adapted to be screwed on the head H and provided with an annular 100 series of minute orifices *k*, whence the gas issues and is burned as with an ordinary ring

burner. The cap K carries a gallery supporting a glass bowl or short chimney L and arms *m*, supporting a reflector M.

I claim—

5 1. In an atmospheric burner for incandescent lighting, the combination with the gas-supply tube, of a gas-regulating valve and of means of adjusting said valve and of directing the issuing jet of gas, said means consisting of a tube adapted to screw upon the gas-
10 supply tube and having an apertured upper end to which the valve is fixed, the said tube being surmounted by a jet-directing nozzle substantially as specified.

15 2. In an atmospheric burner, the combination with the gas and air mixing tube and with an independently-adjustable valve for regulating the gas-supply, of a disk valve adapted to close against a seat at the lower
20 end of the mixing-tube, and carried by a nut screwing on a threaded part of the gas-supply tube for the purpose of regulating the admission of air to the mixing-chamber, substantially as specified.

25 3. The combination with an atmospheric gas-burner provided with a valve controlling the admission of air to the lower end of the mixing-tube and around the gas-supply, of a supplementary burner adapted to be fitted
30 onto the head of the atmospheric burner in lieu of the mantle and mantle-support, and adapted for burning gas unmixed with air, substantially as specified.

35 4. In an atmospheric burner, the combination with a gas-supply tube having an open upper end, of a tube screwing on the gas-supply and having a dome-shaped perforated upper end, a plug-valve depending from the upper end of the tube and adapted to enter
40 the gas-supply tube, and a jet-nozzle secured to the upper end of the valve-carrying tube, substantially as described.

45 5. In an atmospheric burner, the combination with a mixing-tube, and a gas-supply tube, of a valve for regulating the admission of air to the lower end of the mixing-tube, a tube adjustably mounted on the gas-supply

tube and projecting through the said valve, the upper end of the tube being perforated, a valve secured to the inner face of the top of
50 the said tube and adapted to regulate the flow of gas through the gas-supply tube, and a jet-nozzle secured to the upper end of the valve-carrying tube, substantially as described.

6. In an atmospheric burner, the combination with a mixing-tube, and a gas-supply
55 tube, of a disk valve adjustably supported on the gas-supply tube and adapted to regulate the admission of air to the mixing-tube, of a supplementary burner adapted to be secured
60 to the head of the mixing-tube in lieu of the mantle and mantle-support, substantially as described.

7. An atmospheric burner, consisting of a mixing-tube having a valve-seat at its lower
65 end, a screw-threaded gas-supply tube having open upper end, a disk valve adapted to be seated on the seat of the mixing-tube, a nut on the gas-supply tube and provided with arms secured to said valve, a tube screwing
70 on the gas-supply tube and having its upper end projecting through the disk valve and provided with perforations, a plug-valve depending from the top of the tube and adapted to enter the gas-supply tube, a jet-nozzle se-
75 cured to the upper end of the tube carrying the plug-valve, and interchangeable burners for the mixing-tube, substantially as described.

8. In an atmospheric burner, the combination with a mixing-tube, and a gas-supply
80 pipe, of a valve for closing the lower end of the mixing-chamber, and a valve for closing the upper end of the supply-pipe, said valves being separately and movably mounted on
85 the gas-supply pipe, to permit each to be adjusted independently of the other, substantially as described.

Dated April 10, 1900.

THEODORE ELIAS SINNBERG.

Witnesses:

T. W. KENNARD,
C. G. CLARK.