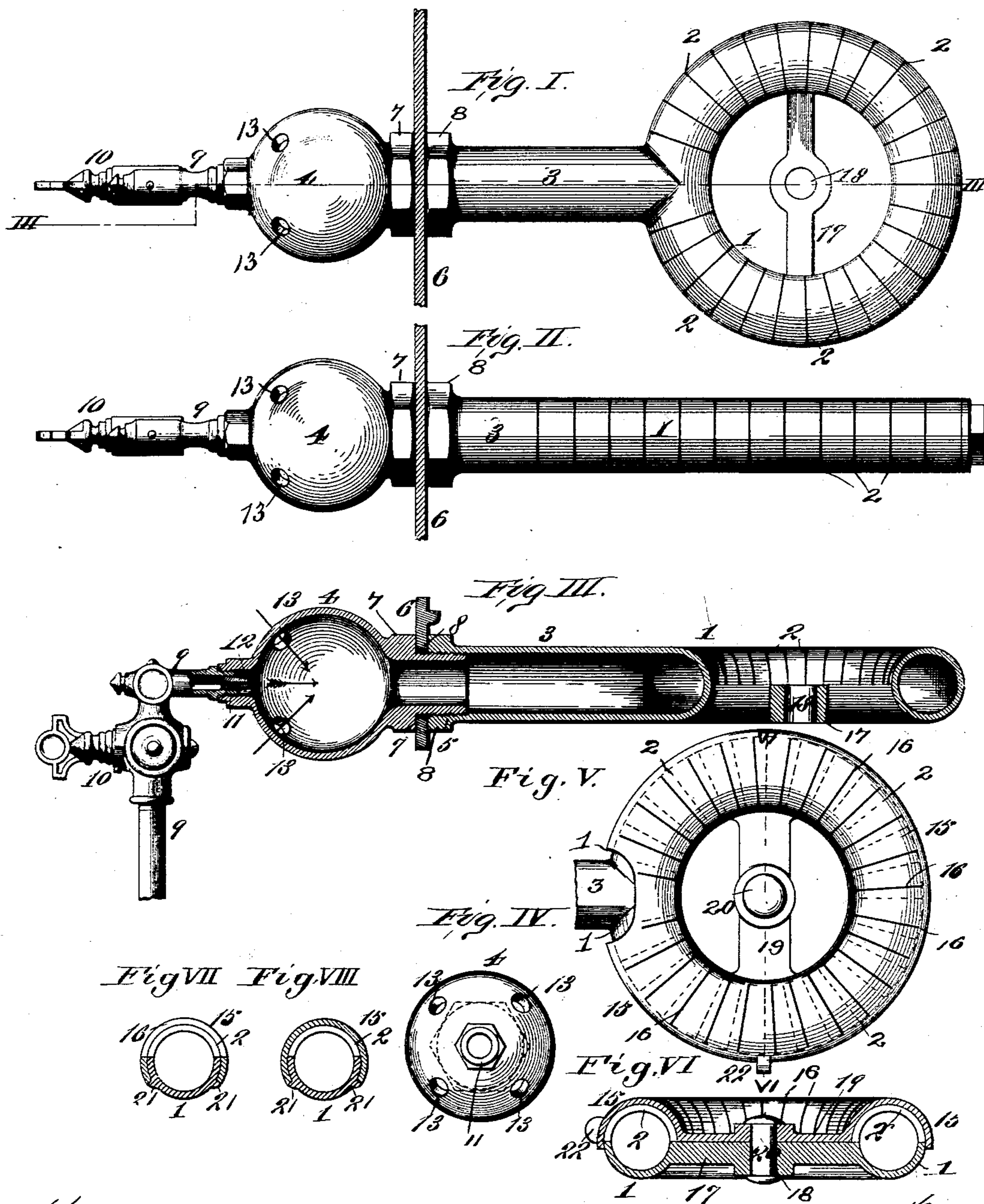


(No Model.)

G. HEIDEL.
GAS BURNER.

No. 520,309.

Patented May 22, 1894.



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UNITED STATES PATENT OFFICE.

GUSTAVOS HEIDEL, OF ST. LOUIS, MISSOURI.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 520,309, dated May 22, 1894.

Application filed May 13, 1893. Serial No. 474,060. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVOS HEIDEL, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Gas-Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to certain improvements in that class of gas burners in which a slotted tube is employed, through which the carbureted air escapes and burns.

My invention consists in features of novelty hereinafter fully described and pointed out in the claims.

Figure I is a top or plan view, illustrative of my invention. Fig. II is a similar view, showing a modified form of the tube. Fig. III is a vertical section, taken on line III—III, Fig. I. Fig. IV is an end view of the mixing chamber. Fig. V is a top view of the burner proper. Fig. VI is a vertical section, taken on line VI—VI, Fig. V. Figs. VII and VIII are transverse sections of the form of burner shown in Fig. II, with the sliding cap applied; Fig. VII showing the cap when moved to register with the slots in the tube; and Fig. VIII showing the parts when the cap is moved so as to cover the slots in the tube.

Referring to the drawings, 1 represents the tube having semi-circular slots 2, through which the carbureted air escapes and is burned. 3 represents the hollow neck of the tube. In Figs. I, III, V and VI, this tube is shown as circular, while in Fig. II the tube is shown as straight.

4 represents the commingling or air mixing spherical chamber, onto which the neck 3 of the tube 1 is screwed, as shown at 5, Fig. III.

My improved burner is particularly adapted for use in ranges and stoves, and is adapted to be placed directly beneath the pot-holes of the range or stove.

6 represents a portion of the wall of the range or stove, which is clamped between the shoulder 7 of the mixing chamber 4 and the end 8 of the neck 3 of the tube 1. By providing the mixing chamber with the shoulder 7, and the neck 3 with the straight end 8, a firm and secure attachment is provided, which holds the burner rigidly in place.

9 is the gas supply pipe, provided with a

valve 10, and which is joined to the mixing chamber at 11.

12 represents the jet fitting in the end of the pipe 9, and which discharges the gas into the chamber 4. The chamber 4 is provided with air passages 13. There are preferably four of these passages, and they are arranged radially with the center of the mixing chamber, so that the air entering therethrough moves in the direction of the featherless arrows, Fig. III, and unites with the gas escaping from the jet, as shown by the full arrow, Fig. III. By thus arranging the openings 13 so that the air currents are admitted in such a manner that they will cross the line of the gas, as it escapes from the jet 12, there is a thorough and uniform mixing of the gas with the air, which results in a complete combustion at the burner.

It is sometimes desirable to use coal with a stove or range provided with gas burners, and to admit of this use, without removing the burners, and at the same time prevent the burners and their slots from being filled or clogged with soot from the coal, I provide my burners with a sliding cap 15, as shown in Figs. V, VI, VII and VIII. This cap has a number of semi-circular slots 16 adapted to register with the slots 2 in the tube 1, and by moving the cap slightly, the slots 16 are caused to move away from the slots 2, and thus the slots 2 are covered when the burner is not in use, and when the stove is being used with coal as a fuel.

In the form of burner shown in Figs. I, III, V and VI, the tube is provided with a bridge 17, having a perforation 18, and the cap, (which in this form is circular,) is provided with a like bridge 19, adapted to fit over the bridge 17, and having an opening registering with the opening 18 to receive a bolt or rivet 20 by which the parts are connected together, and are so held that the cap can be moved to open and close the slots 2, as stated.

In the form shown in Figs. II, VII and VIII, the cap is made to surround more than half of the tube, and the tube is provided with lugs or projections 21 to prevent the cap from turning on the tube, while it may be moved endwise thereon to open and close the slots in the tube. The cap is provided with a projection 22 by which it may be moved. A

burner thus constructed is well adapted for use in a stove or range, while at the same time it may be closed when it is desired to use coal in the stove.

5 I claim as my invention—

1. The combination of a tube 1 formed with a series of semi-circular slots 2, and a straight neck 3, having a shoulder 8, a spherical mixing chamber 4 having a shoulder 7, radial
10 openings 13 and screw thread connection with the neck, a supply pipe 9 having a jet 12, and the cap 15, extending more than half way around the tube and sliding lengthwise thereof, having a series of semi-circular slots 16,
15 adapted to register with the semi-circular slots of the tube; substantially as described.

2. The combination of a tube 1 formed with a series of semi-circular slots 2, and a straight neck 3, having a shoulder 8, a spherical mixing chamber 4, having a shoulder 7, radial
20 openings 13, and screw thread connection with the neck, a supply-pipe 9, having a jet 12, the cap 15, extending more than half way around the tube and sliding lengthwise thereof, hav-

ing a series of semi-circular slots 16, adapted
25 to register with the semi-circular slots of the tube, and the lugs or projections 21 located on the tube for preventing the turning of the cap thereon; substantially as described.

3. The combination of a circular tube 1, 30 formed with a series of semi circular radial slots 2, a straight neck 3, having a shoulder 8, and a bridge 17 having a perforation 18, a spherical mixing chamber 4 having a shoulder 7, radial openings 13, and screw thread
35 connection with the neck, a supply pipe 9 having a jet 12, the circular cap 15, extending more than half way around the tube and sliding lengthwise thereof, having a series of semi-circular radial slots 16, adapted to regis- 40
ter with the semi-circular radial slots of the tube, and a perforated bridge 19, and the fastening 20, whereby the cap is pivoted, to the tube; substantially as described.

GUSTAVOS HEIDEL.

In presence of—

A. M. EBERSOLE,

E. S. KNIGHT.