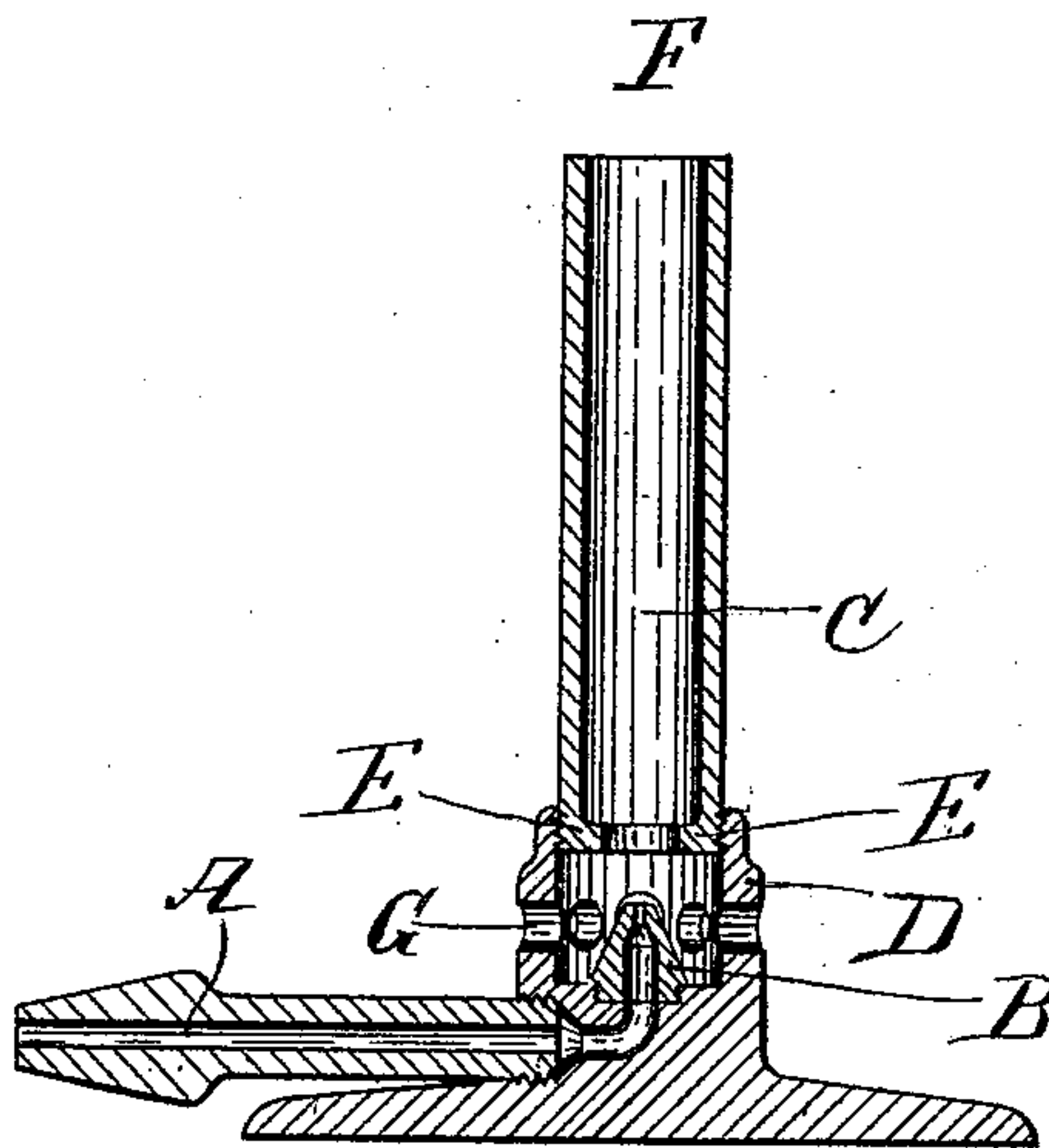


(No Model.)

S. L. WIEGAND.
HEATING GAS BURNER.

No. 405,139.

Patented June 11, 1889.



WITNESSES
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S. LLOYD WIEGAND, OF PHILADELPHIA, PENNSYLVANIA.

HEATING-GAS BURNER.

SPECIFICATION forming part of Letters Patent No. 405,139, dated June 11, 1889.

Application filed January 6, 1888. Serial No. 259,947. (No model.)

To all whom it may concern:

Be it known that I, S. LLOYD WIEGAND, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Heating-Gas Burners; and I do hereby declare the following to be a sufficiently full, clear, and exact description thereof as to enable others skilled in the art to make and use the said invention.

This invention relates to apparatus for burning gas for calorific effect, and has for its object the economy of gas and the adaptation to burn gas effectively under greater variations of pressure than has been practicable with other apparatus.

The nature of this invention may be concisely stated to consist of an inwardly-turned flange or rim in the tube of Bunsen burners, in which air and gas commingle before combustion at the point where the air enters the tube with the jet of gas injected therewith, avoiding eddies therein.

The following is a more full and exact description of this invention and the mode of operating the same, reference being had to the accompanying drawing, and the letters of reference marked thereon, in which a vertical section of a Bunsen burner containing this invention is shown.

A represents the gas-supply pipe; B, the jet-tube; C, the cylindric chimney or mixing-tube, of practically uniform diameter, held by the frame D in axial line at its entrance with the jet-tube B, as shown in the drawing.

The frame D is shown as a hollow bulb with apertures G to admit air. Any other form of frame admitting air and holding the tubes B and C in proper alignment answers the purpose.

E is a rim or flange projecting inwardly and constricting the flow of air entering the tube with the jet or gas and prevents the entrance of any air, excepting that contiguous to the gas-jet, and prevents the forming of eddies

within the tube C. The air and gas commingle in the tube C and form a combustible mixture, which burns with the atmosphere as it issues from the tube C at the open upper end, (marked F,) with a flame of slight illuminating but great heating effect.

It is found experimentally that a less quantity of gas will produce an equal heating effect when the rim or flange E is used in the cylindric tube C, as described, than when the lower end of tube C is left entirely open, and that the flow of gas from the jet-tube B may be reduced to a much lower point when the flange E is used without the gas igniting inside of the tube C in a luminous flame than where the tube C is unobstructed.

Greater variations in the pressure of the gas-supply are admissible in burners containing this improvement without interrupting the proper mixture of air and gas required for combination in a non-luminous flame than when it is not used.

I am aware that gas-burners of the Bunsen type have been made in which the upper portion of the mixing tube or chimney was contracted and obstructed; also, that burners have been made in which an expanded chamber for heating hydrocarbon vapors with air before burning them as they issued therefrom through small apertures in such chambers. In this latter device eddies of combustible mixtures occurred with such expanded chamber. Neither of these devices do I claim; but

What I do claim is—

The mixing-tube C, of practically uniform diameter and having an inwardly-projecting rim or flange E at its entrance, in combination with the jet-tube B, located in the same axial line therewith and attached thereto, substantially as described and set forth.

S. LLOYD WIEGAND.

Witnesses:

GEO. MCARTHUR,
J. DANIEL EBY.