

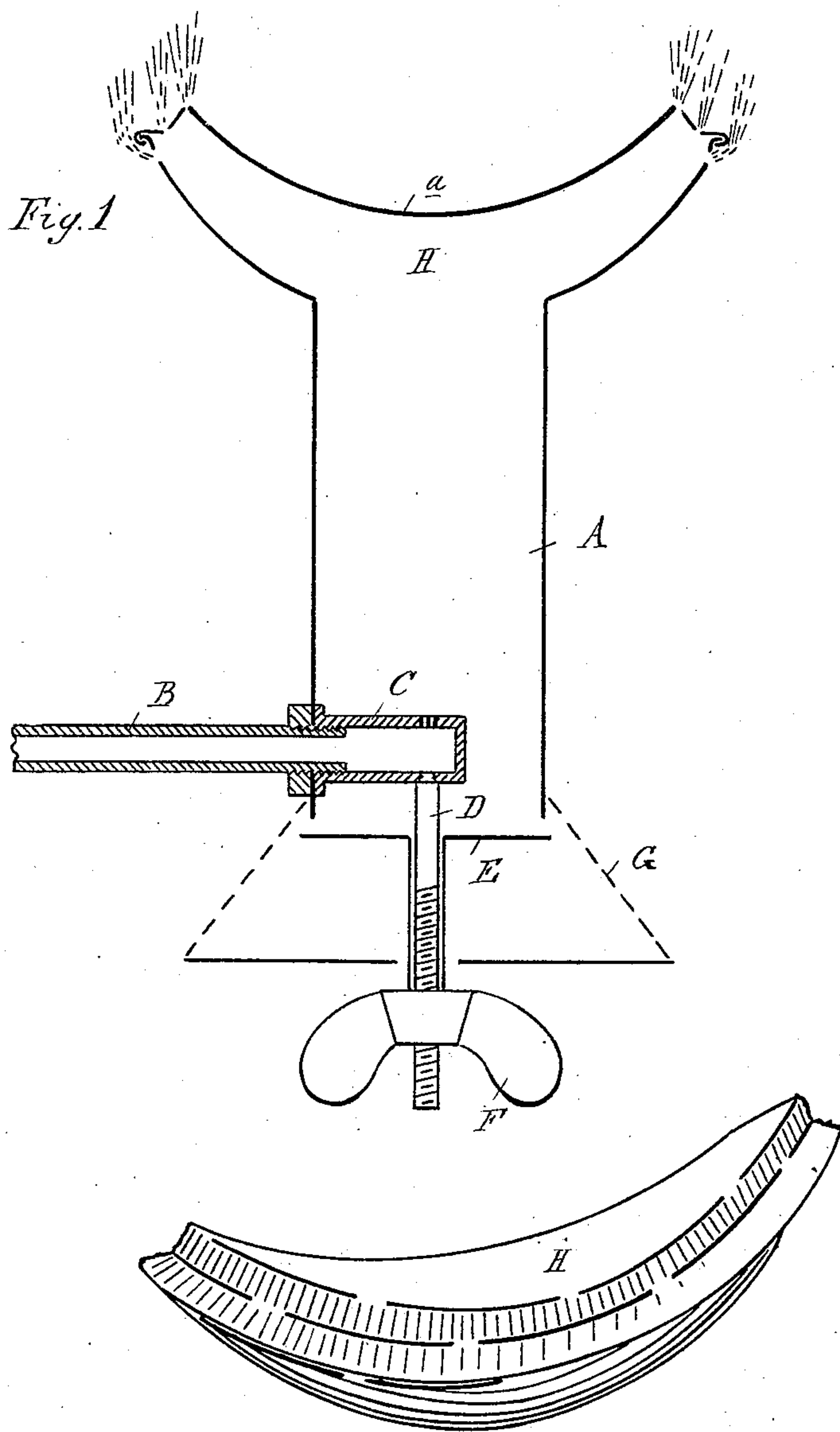
(No Model.)

B. MARTIN.

GAS BURNER.

No. 312,367.

Patented Feb. 17, 1885.



Attest  
J. Paul Mayer  
C. Seely

Inventor  
Bruno Martin  
By *Thos. S. Sprague* Atty

# UNITED STATES PATENT OFFICE.

BRUNO MARTIN, OF EAST SAGINAW, MICHIGAN.

## GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 312,367, dated February 17, 1885.

Application filed July 23, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, BRUNO MARTIN, of East Saginaw, in the county of Saginaw and State of Michigan, have invented new and useful Improvements in Gas-Burners; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

10 This invention relates to an improvement in gas-burners of that kind used for heating purposes, and generally designated as "Bunsen burners."

The invention consists in the arrangement and construction of the parts for obtaining perfect combustion with a steady flame and ease of adjustment of the air-supply, whatever the pressure, quality, or quantity of the gas consumed may be.

20 Figure 1 is a vertical central section of my burner. Fig. 2 is a detached sectional perspective of the gas-burner.

A is the mixing-tube, into which the gas is delivered near the bottom by the delivery-pipe B, which terminates in a nipple, C, provided upon its upper side with a sufficient number of small perforations for the escape of the gas. Secured to the under side of the nipple is the guide-rod D, upon which is sleeved the valve E, for the purpose of regulating the amount of air allowed to enter the mixing-tube, said valve being adjusted by means of the thumb-screw F, threaded upon the guide-rod D.

35 G is a funnel-shaped shield surrounding the lower end of the mixing-tube. It is perforated upon the sides with an imperforate bottom. This arrangement effectually prevents any flickering of the flame, and mixes the air more readily with the gas. The mixing-tube A connects on top with the rosette H, which presents to the air and gas rising in the mixing-tube a convex face, *a*, which acts as a ready deflector toward the outer edges of the rosette, and also assists the complete mixing of the gas and air. The outer edges of the rosette are provided with ring-apertures concentrically arranged, each of which produces a separate ring-flame.

50 To allow the ring-apertures to be punched out of the metal plate or plates forming the rosette without detaching the parts, each ring-

aperture is formed by a series of slits with small webs left between them; but these webs are so arranged that they alternate in the different rings, whereby a solid flame is produced. 55

The ring-apertures are arranged upon different planes and with different diameters, the ring-aperture with the largest diameter being upon the lowest plane. This arrangement brings the tips of the ring-flame upon the lower plane in contact with the ring-flame from the next higher aperture, thus helping the smokeless combustion of the outer and lower flames, which are more liable to smoke. 65

The arrangement of the rosette herein described prevents by its form and arrangement of apertures the burning within of the gas entirely except when relighting the gas quickly before the parts have become cooled off. In this case the valve E has to be closed before lighting, after which it may then again be gradually opened to the desired degree. 70

What I claim as my invention is—

1. In a gas-burner for heating, the rosette H, provided with the convex deflecting-face *a* over the mixing-tube, and concentrically apertured upon its outer rim, said apertures being upon different planes with different diameters, and with the apertures of the largest diameter upon the lowest plane, substantially as and for the purposes described. 75

2. In a gas-burner for heating, the valve E, centrally sleeved upon a guide-rod below the open end of the mixing-tube, and provided with a thumb nut for adjusting it upon said guide-rod, substantially as and for the purposes described. 85

3. The gas-burner herein described, consisting of the mixing-tube A, provided with delivery-pipe B, nipple C, within said tube, guide-rod D, secured to said nipple, valve E, sleeved upon said rod, the rosette H, connected with the upper end of the tube A. and the shield G, surrounding the lower end of said tube, substantially as and for the purposes specified. 95

\*BRUNO MARTIN.

Witnesses:

H. S. SPRAGUE,  
E. SCULLY.