No. 611,248. Patented Sept. 27, 1898.

J. C. GRAY & T. RODERICK.

GAS BURNER.

(No Model.) (Application filed Oct. 30, 1897.)

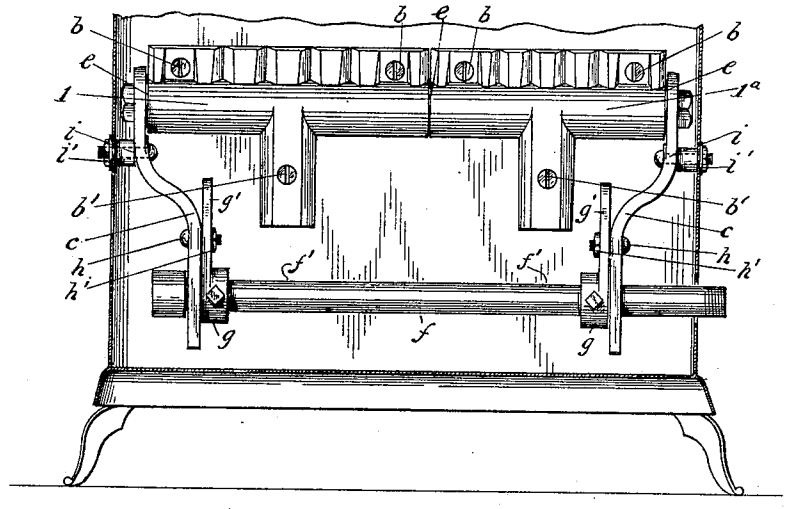


Fig. 1

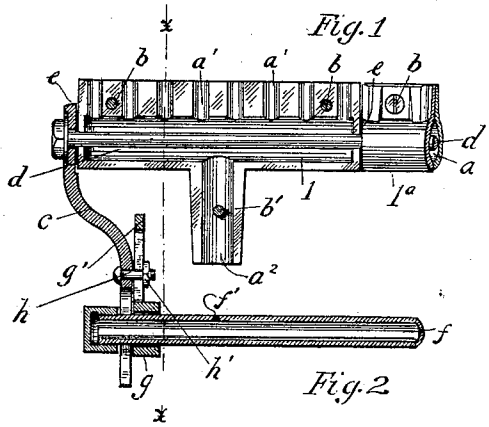


Fig. 2

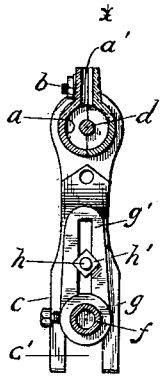


Fig. 3

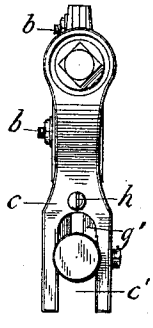


Fig. 4

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UNITED STATES PATENT OFFICE.

JAMES C. GRAY AND THOMAS RODERICK, OF COLUMBUS, OHIO; SAID RODERICK ASSIGNOR TO SAID GRAY.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 611,248, dated September 27, 1898.

Application filed October 30, 1897. Serial No. 656,918. (No model.)

To all whom it may concern:

Be it known that we, JAMES C. GRAY and THOMAS RODERICK, citizens of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Gas-Burners; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of our present invention is to provide an improved burner for either artificial or natural gas.

In the annexed drawings, illustrating embodiments of our improvements, Figure 1 is a front view of a burner in position in a heater. Fig. 2 is a longitudinal vertical sectional view of the left-hand side of the burner shown in Fig. 1. Fig. 3 is a transverse vertical sectional view taken on a plan indicated by the line x x, Fig. 2; and Fig. 4 is an end view.

The burner proper is preferably made up of two or more sections l and l^a, of different lengths and arranged in a line parallel, or substantially so, with the supply-pipe, so that by combining those of equal and of different lengths a great variety of sizes of burner may be made. For example, if the several sections are five and six inches in length a burner having a total length of ten inches, eleven inches, twelve inches, fifteen inches, sixteen inches, &c., may be had by permutation of the two sizes of casting. The sections consist of a horizontal tubular portion a, having jet-holes a', and a vertical inlet or mixing tube a^2, opening into the portion a. To avoid expense and trouble of coring in the manufacture of these parts, each section is made of two corresponding parts by division vertically, that are matched and fastened together by means of screws or bolts b b to form the tubular portion and the jet-holes.

Downwardly-extended end pieces or legs c are placed against the ends of the burner and a bolt d passed entirely through the horizontal tubular portion of the burner. A nut turned up tightly on the bolt will secure the sections of the burner and the end pieces of the legs together. To prevent the escape of gas at any place except through the jet-holes, asbestos or other packing, as shown at e, may be provided between the joints. The lower ends of the end pieces or legs are bifurcated or slotted, as shown at c', to receive the supply-pipe f, having small escape-holes f', and on the pipe are collars g, having upwardly-extending slotted arms g'. A stationary bolt or pin h in the leg c extends through the slot of each of the arms g', which are clamped to the legs by means of nuts h'. Upon loosening these nuts the pipe may be raised or lowered to diminish or increase the distance of the supply-pipe from the burner proper.

In feeding the burner with gas from the holes f' in the supply-pipe the jet of gas takes along with it more or less air, according to the pressure or velocity with which it escapes, and the combustion of the gas is more or less perfect, according to the quantity of air mixed with it. Therefore by making the supply-pipe adjustable with respect to the burner, or vice versa, the quantity of air to be taken in or mixed may be nicely regulated.

The burner may be fastened to the heater by means of bolts i, passing through the legs or end pieces and the sides of the heater, with nuts i' for fastening the burner to the ends of the heater.

The shanks of the screw b' in the vertical mixing-tube a^2 assist in mixing the gas and air, and the bolt d in the burner-tube serves to spread the gas to the various jets, insuring complete combustion and large volume or area of flame.

What we claim, and desire to secure by Letters Patent, is—

A gas-burner constructed of two or more sections each of which is made of corresponding or matching halves, to form the horizontal tube l having jet-holes a' and mixing inlet-tube a^2, bolts b uniting the said matching halves, bolt b' passing through the inlet-tube a^2 and serving to mix the entrained gas and air, and the bolt d uniting the several sections and serving to spread the gas at the jet-holes, substantially as shown and described.

In witness whereof we have hereunto affixed our hands each in the presence of the two here subscribed witnesses.

JAMES C. GRAY.
THOMAS RODERICK.

Witnesses:
GEO. W. ALFRED,
GEO. M. FINCKEL.