C. B. McELWAINE.

GAS BURNER.

APPLICATION FILED AUG. 30, 1911. RENEWED SEPT. 29, 1913.

1,078,588. Patented Nov. 11, 1913.

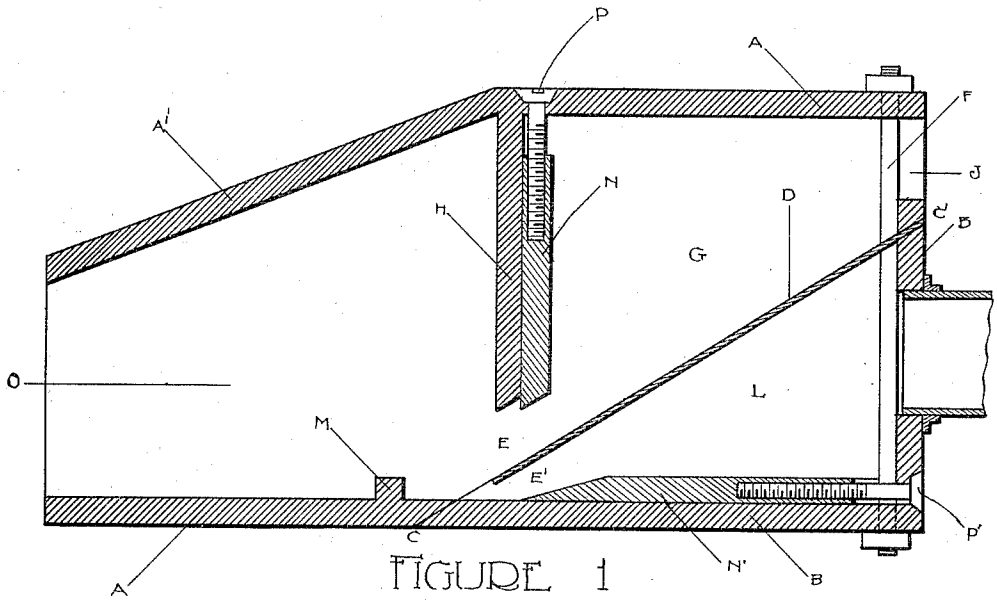


FIGURE 1

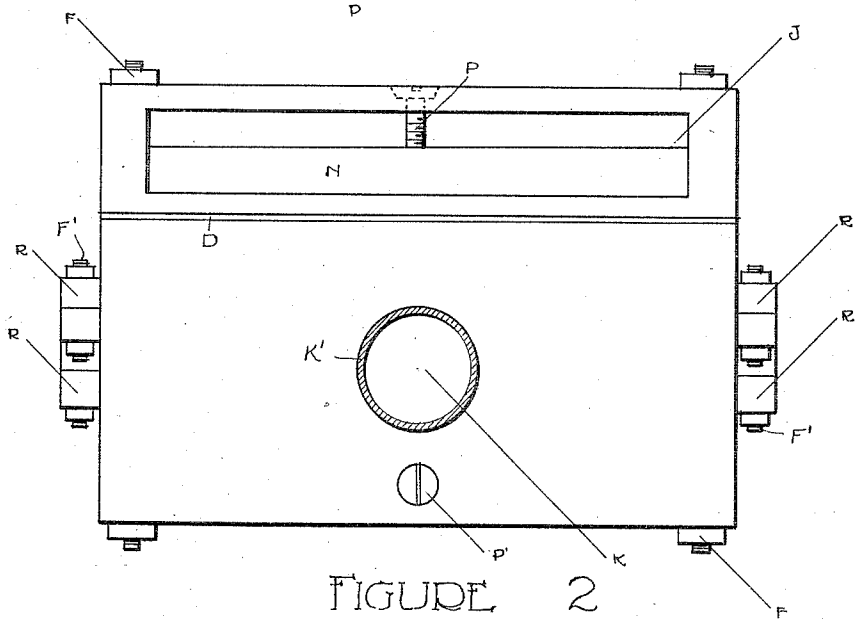


FIGURE 2

Witnesses
G. F. Baker.
M. E. Jones Jr.

Inventor C. B. McElwaine
By H. P. Barclift
Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CLAYTON B. McELWAINE, OF TULSA, OKLAHOMA, ASSIGNOR OF ONE-HALF TO R. E. MARKHAM, OF TULSA, OKLAHOMA.

GAS-BURNER.

1,078,588. Specification of Letters Patent. Patented Nov. 11, 1913.

Application filed August 30, 1911, Serial No. 646,865. Renewed September 29, 1913. Serial No. 792,480.

To all whom it may concern:

Be it known that I, CLAYTON B. McELWAINE, a citizen of the United States, residing at Tulsa, in the county of Tulsa, State of Oklahoma, have invented a new and useful Gas-Burner, of which the following is a specification.

My invention relates to gas burners and its object is to provide in a device of this kind a simple and improved construction and at the same time a construction of burner to which the gas and air are supplied in thin sheets and intimately and thoroughly mixed therein to secure the best results upon combustion.

The device embodying my invention is hereinafter described and illustrated in the accompanying drawings.

In these drawings, Figure 1 is a central vertical sectional view and Fig. 2 is an end elevation.

Referring to the drawings the burner comprises a metal box preferably made in two castings A and B. These castings are secured together by bolts F extending through both sections and by bolts F′ passing through lugs R cast on the sides of each section. In cross section the burner is preferably rectangular and at one end is tapered at A′ to provide a broad mouth or exit O for the mixed air and gas.

Midway of the section A, a transverse wall H integral with the section extends inwardly and provides between the same and the bottom of the section B a suitable space forming a passage for the incoming air and gas and also divides the box into a fuel receiving section and a mouth section. The fuel receiving section is divided by an inclined plate D clamped between the sections A and B by the bolts F and F′. Said plate D divides the fuel receiving section into an air receiving chamber G and a gas receiving chamber L and divides the space intermediate the wall H and the bottom of section B so as to provide an opening or passage E for the air and an opening or passage E′ for the gas. The bolts F pass through plate D and properly position the plate in the burner.

A sliding plate N, adjustable by a screw P passing through the top wall of section A, whose threads engage threads in the plate, may be adjusted to regulate the extent of the opening E and a sliding plate N′ resting on the bottom of section B is adjustable to regulate the extent of the opening E′ by means of a screw P′ passing through the end wall of section B and whose threads engage threads in the plate N′.

Into an opening K of the section B is fitted a pipe K′ through which gas from any approved source (not shown) is supplied to the chamber L. Section A is provided with a rectangular air intake opening J leading to the chamber G.

M designates a low wall or abutment formed integral with the bottom of section A intermediate the wall H and mouth O.

The gas issues from the chamber L through the passage E′ and as it passes the opening, it draws or sucks in air from chamber G through the opening E. Said gas and air emerges from these openings in wide sheets and strike the abutment M which causes the gas and air to thoroughly intermingle and mix, after which the mixture flows up over the abutment and out through the mouth O in a wide sheet.

It is clear that changes within the terms of the following claims may be made without departing from the spirit and scope of the invention.

Having thus described my invention what I claim is:—

1. A gas burner having a hollow body, a wall extending within said body and spaced from one portion thereof thereby providing a space between the end of the wall and body and forming an air and gas mixing chamber on one side thereof and a fuel receiving chamber on the opposite side thereof, said latter chamber having a partition dividing the same into a gas receiving chamber and an air receiving chamber and dividing the space between the wall and body into an opening or passage for air and an opening or passage for gas, means to supply air to the air chamber, means to supply gas to the gas chamber, and an abutment in the mixing chamber against which the air and gas strike, substantially as described.

2. A gas burner having a hollow body made in separable sections, means securing said sections together, a wall extending within said body from one of said sections and spaced from one portion of the body thereby providing a space between the end of the wall and body and forming an air and

gas mixing chamber on one side thereof and a fuel receiving chamber on the opposite side thereof, said latter chamber having a removable partition dividing the same into a gas receiving chamber and an air receiving chamber and dividing the space between the wall and body into a passage for air and a passage for gas, means to supply air to the air chamber, means to supply gas to the gas chamber, an abutment formed on one of said sections in the mixing chamber against which the air and gas strike, substantially as described.

3. A gas burner having a hollow body, a wall extending within said body and spaced from one portion thereof thereby providing a space between the end of the wall and body and forming an air and gas mixing chamber on one side thereof and a fuel receiving chamber on the opposite side thereof, said latter chamber having a partition dividing the same into a gas receiving chamber and an air receiving chamber and dividing the space between the wall and body into an opening or passage for air and an opening or passage for gas, means to supply air to the air chamber, means to supply gas to the gas chamber, sliding means to regulate the extent of said air opening, sliding means to regulate the extent of said gas opening, and an abutment in the mixing chamber against which the air and gas strike, substantially as described.

4. A gas burner having a hollow body provided with a fuel receiving chamber, an inclined partition in said chamber dividing the same into an air receiving chamber and a gas receiving chamber, said fuel receiving chamber provided with an opening divided by said partition into openings or passages for the outflow of air and gas and means to regulate the extent of each of said openings adjustable relative to said partition, means to supply air to the air chamber, and means to supply gas to the gas chamber, substantially as described.

5. A gas burner having a hollow body made in separable sections, means securing said sections together, a wall integral with one of said sections extending within said body and spaced from one portion thereof thereby providing a space between the end of the wall and body and forming an air and gas mixing chamber on one side thereof and a fuel receiving chamber on the opposite side thereof, said latter chamber having a removable partition plate dividing the same into a gas receiving chamber and an air receiving chamber and dividing the space between the wall and body into a passage for air and a passage for gas, said plate secured between the body sections, means to supply air to the air chamber, means to supply gas to the gas chamber, and a raised portion on one of said sections in the mixing chamber against which the air and gas strike, substantially as described.

6. A gas burner having a hollow body made in separable sections, bolts securing said sections together, a wall connected to one of said sections extending within said body and spaced from one portion thereof thereby providing a space between the end of the wall and body and forming an air and gas mixing chamber on one side thereof and a fuel receiving chamber on the opposite side thereof, said latter chamber having a removable partition plate dividing the same into a gas receiving chamber and an air receiving chamber and dividing the space between the wall and body into a passage for air and a passage for gas, said plate clamped between the body sections by said bolts, a sliding plate adjustable to regulate the extent of opening of the air passage, a sliding plate adjustable to regulate the extent of opening of the gas passage, a raised portion in the mixing chamber against which the air and gas strikes, means to supply air to the air chamber, and means to supply gas to the gas chamber, substantially as described.

C. B. McELWAINE.

Witnesses:
J. L. BLAIR,
ROGER S. SHERMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."