

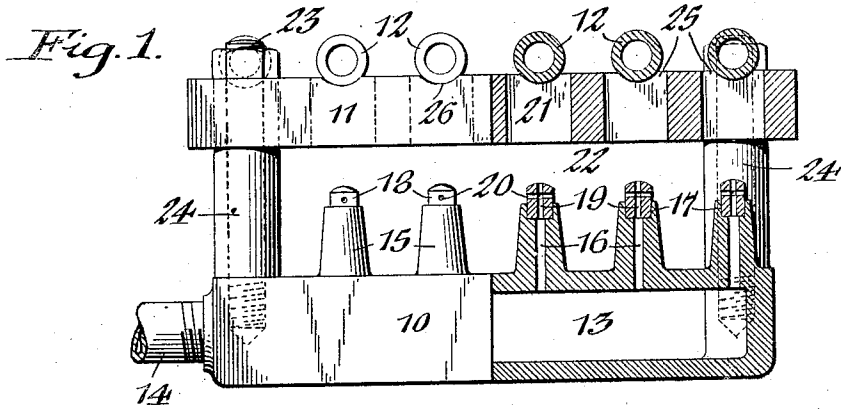
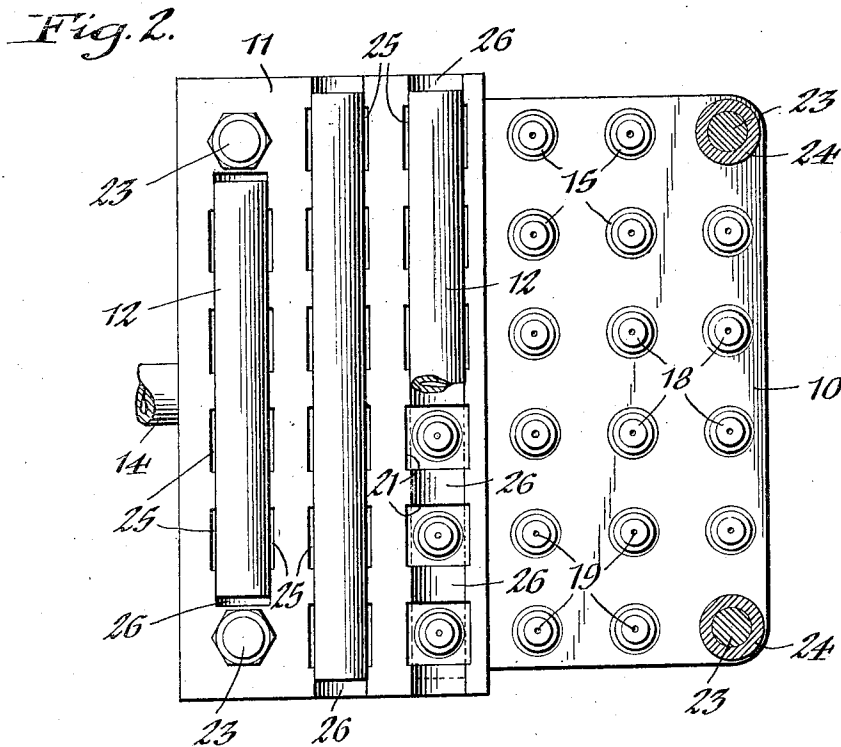
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I. B. TAYLOR

GAS BURNER

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UNITED STATES PATENT OFFICE.

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GAS BURNER.

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To all whom it may concern:

Be it known that I, ISRAEL B. TAYLOR, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Gas Burners, of which the following is a specification.

This invention relates to improvements in a gas heater or burner which is particularly intended for use in stoves and furnaces.

One of its objects is to provide an efficient gas burner which is so constructed as to insure complete combustion of the fuel and which will produce a maximum amount of heat with a minimum expenditure of fuel.

Another object of the invention is to provide an inexpensive burner of this character which is simple and compact in construction and which is so organized that it can be readily assembled and dismembered.

In the accompanying drawings:—Figure 1 is a side elevation of a gas burner embodying my improvements. Figure 2 is a sectional top plan view thereof.

Similar characters of reference indicate corresponding parts throughout the several views.

In its general organization, this burner comprises a supporting base or burner body 10, a grate or mixer plate 11 surmounting said base in spaced relation thereto to form a universal mixing chamber, and a plurality of flame-holding bars 12 sustained by the grate. The burner may be supported in the fire pot of a stove or furnace by simply resting on the grates thereof.

The supporting base or burner body 10 is preferably rectangular in shape and of hollow form to provide a gas reservoir or manifold chamber 13 to which a gas supply pipe 14 is connected. Projecting from the upper side of the burner body are a plurality of burner-nozzles 15 which are uniformly spaced, as shown, and whose gas passages 16 terminate at their upper ends in sockets or enlargements 17. Seated in these sockets are burner tips 18 having gas ports 19 in line with the corresponding nozzle passages 16 and transverse air ports 20 intersecting said gas ports. By constructing the burner tips in this manner, air is drawn through the ports 20 and unites with the gas to produce an extremely hot non-luminous flame, similar to that of the Bunsen burner.

Disposed above the burner body and suitably spaced therefrom is the grate or mixer plate 11, which is likewise rectangular and is provided with a plurality of openings or flame passages 21 which are, by preference, axially in line with the burner nozzles 15. The intervening space 22 between the burner-tips 18 and said grate is open and unclosed on all sides and furnishes an ample air supply to the several burners, while the grate-passages 21, which open into said space and through which the flames project, form individual air-mixing tubes, thus insuring complete combustion of the fuel and producing a flame of intense heat.

The grate 11 may be supported in a fixed position relative to the burner body 10 by stud bolts 23 located at the corners of the latter and spacing sleeves 24 applied to said bolts and interposed between the top of the burner body and opposing underside of the grate, as shown in Fig. 1.

The individual flame bars 12 are preferably supported in a horizontal position on the upper side of the grate 11 and are circular in cross section and constructed of metal or other appropriate refractory material. These bars are disposed in parallel relation transversely of the grate, each bar extending from one side thereof to the other and being arranged directly over and substantially centrally in line with a row of grate-openings 21, as shown in the drawings. The diameters of the flame bars are less than the corresponding dimensions of said grate-openings so as to provide, between the latter and the undersides of said bars, slots or outlets 25 for the flames issuing from the burner-nozzles 15. To prevent accidental displacement of the flame bars relative to the grate, the upper side of the latter may be provided between the openings 21 of each row with arcuate seats or grooves 26 in which said bars are removably seated.

By this construction and arrangement, the flames issuing from the nozzles 15 pass upwardly through the grate-openings 21 and impinge against the undersides of the bars 12, from which the flames are deflected outwardly and upwardly in thin sheets through the flame slots 25 and thereafter wrap themselves about said bars and are united in a single flame above each of the latter. This action results in an exceedingly high degree

of heat being given off by the burner, the intensity of the heat reaching its maximum a few seconds after the burner is lighted.

This improved gas burner, while manifestly simple and compact in construction, is very efficient in operation, and although the same is particularly intended for domestic use, it is equally applicable for commercial use where an intense heat is desired with a minimum expenditure of fuel.

I claim as my invention:—

1. A gaseous fuel burner, comprising a supporting base, a gas-receiving chamber, a plurality of burner nozzles rising from said base, a grate disposed above said nozzles in spaced relation thereto, said grate having rows of openings therein, and a plurality of individual flame bars sustained over said grate and substantially in line with said rows of grate-openings.

2. A gaseous fuel burner, comprising a supporting base having a gas-receiving chamber, a plurality of burner-nozzles rising from said base, a grate disposed above said nozzles in spaced relation thereto, said grate having rows of openings therein substantially in line with said nozzles, and a plurality of parallel flame bars mounted on

said grate directly over said rows of openings, and in spaced relation thereto to form flame slots on either side of said bars.

3. A gaseous fuel burner, comprising a supporting base having a gas-receiving chamber, a plurality of burner-nozzles rising from said base, a grate surmounting the latter in spaced relation thereto to form a universal mixing space, said space being open and unenclosed on all sides, said grate having flame openings therein substantially in line with said nozzles, and a plurality of circular flame bars mounted on said grate and extending across the openings thereof.

4. A gaseous fuel burner, comprising a supporting base having a gas-receiving chamber, a plurality of rows of burner nozzles on said base, a grate surmounting the latter in spaced relation thereto to form a universal mixing space, said space being open and unenclosed on all sides, said grate having a plurality of rows of flame openings therein substantially in line with said nozzles, seats formed on said grate between the openings of each row, and a plurality of individual flame bars mounted on said grate and engaging said seats.

ISRAEL B. TAYLOR.