

**July 15 , 1924.**

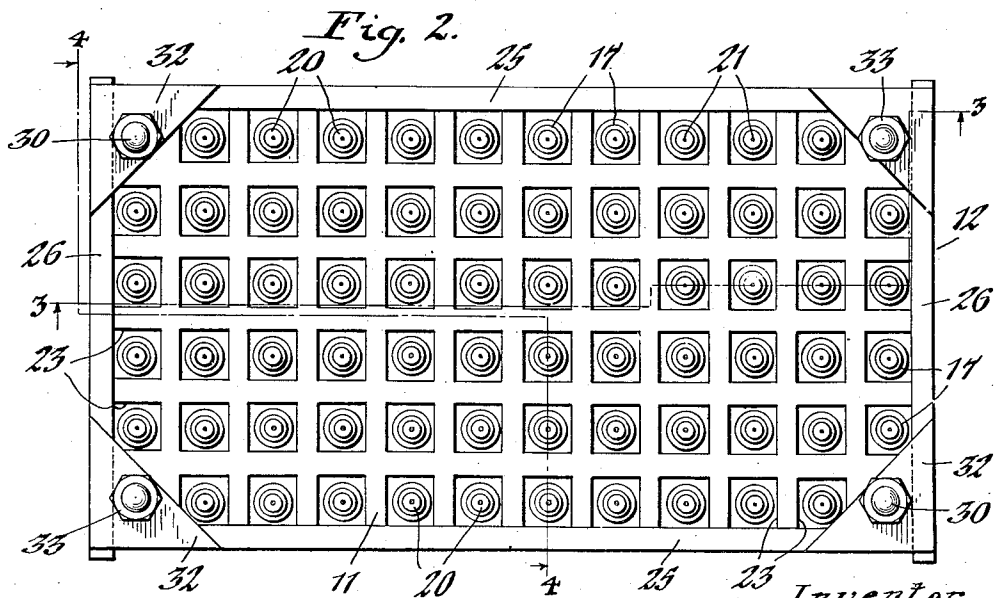
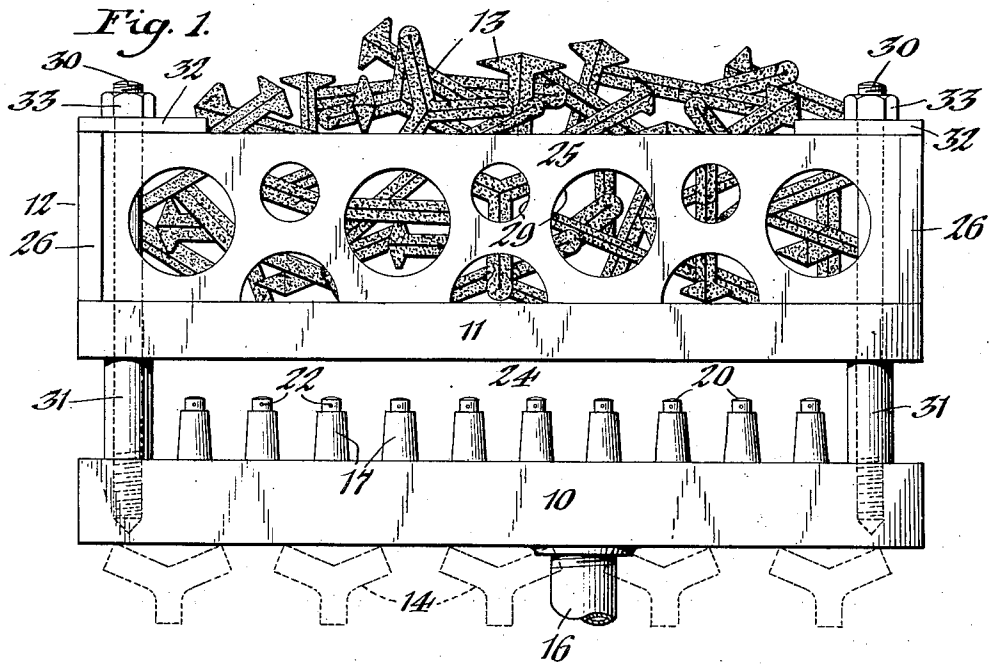
**1,501,631**

I. B. TAYLOR

GAS BURNER

Filed Aug. 21, 1923

2 Sheets-Sheet 1



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Fig. 3.

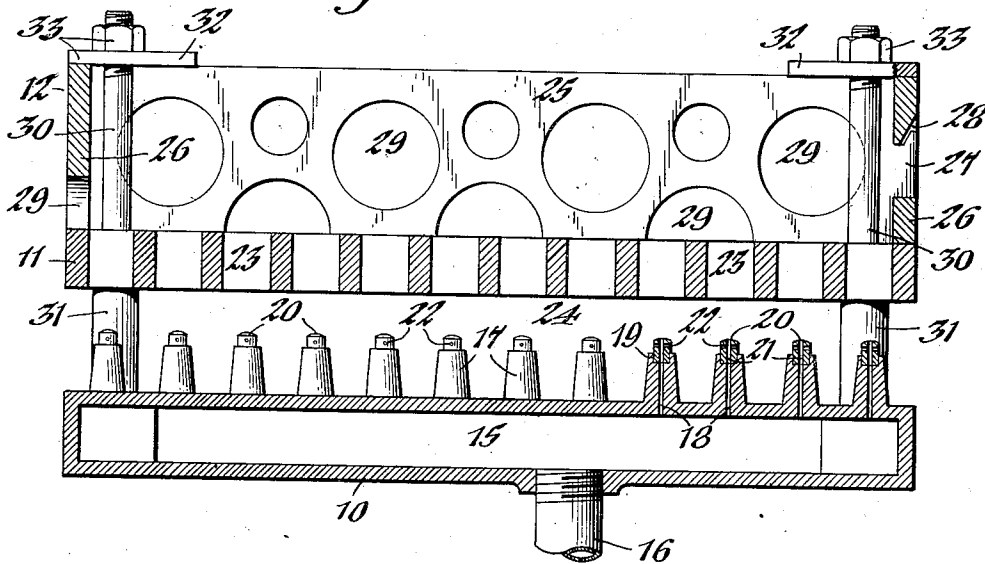


Fig. 4.

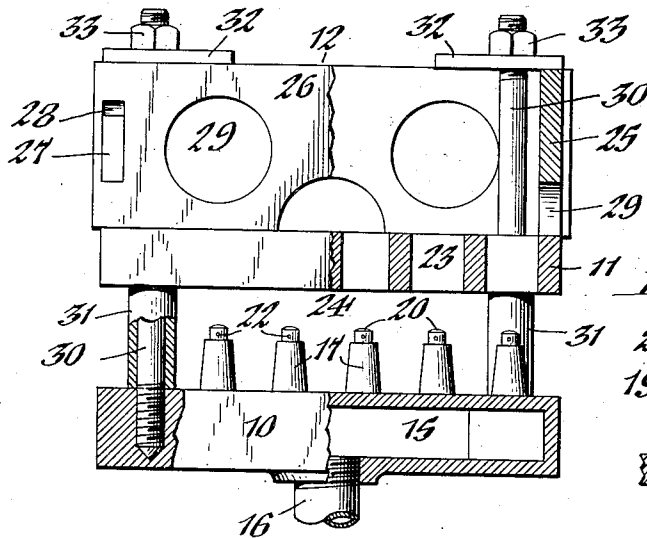
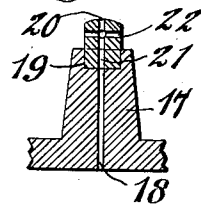


Fig. 5.



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## UNITED STATES PATENT OFFICE.

ISRAEL B. TAYLOR, OF BUFFALO, NEW YORK.

## GAS BURNER.

Application filed August 21, 1923. Serial No. 658,629.

*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 generally to a heating device but more particularly to a gas burner which is intended for use in stoves and furnaces.

One of its objects is to provide an improved gas burner of this character which is simple and compact in construction and which is so organized that it can be readily assembled and dismembered.

Another object of the invention is to provide an efficient and reliable gas burner which will produce a maximum amount of heat with a minimum expenditure of fuel.

In the accompanying drawings: Figure 1 is a side elevation of a gas burner embodying my invention. Figure 2 is a top plan view thereof. Figure 3 is a vertical longitudinal section on line 3—3, Fig. 2. Figure 4 is a transverse section on line 4—4, Fig. 2. Figure 5 is an enlarged vertical section of one of the burner-nozzles.

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 mixer plate 11 surmounting said base and spaced therefrom to form a universal mixing chamber, and an enclosure or basket 12 mounted on the mixer plate for receiving the usual fire clay stilts 13 or other incandescent gas fuel, for expanding the heat. As shown in Fig. 1, the burner is supported as a whole upon the furnace grates 14.

The supporting base or burner body is preferably of rectangular shape and hollow form to provide a gas reservoir or manifold chamber 15 to the bottom of which is connected a gas supply pipe 16. Projecting from the upper side of said burner body are a plurality of burner-nozzles 17 which are uniformly spaced, as shown, and whose gas passages 18 terminate at their upper ends in sockets or enlargements 19. Seated in these sockets are burner-tips 20 having gas ports 21 in alinement with the nozzle passages 18 and transversely arranged air ports 22 intersecting said gas ports. By constructing

the burner tips in this manner, air is drawn through the ports 22 and unites with the gas to produce an extremely hot non-luminous flame, similar to that of the Bunsen burner.

Surmounting the burner body 10 and suitably spaced therefrom is the mixer plate 11, which is likewise rectangular and provided with a plurality of openings or flame passages 23 which are, by preference, axially in line with the burner-nozzles 17. The intervening horizontal space 24 between the burner-tips and said mixer plate is open and unenclosed on all sides and furnishes an ample air supply to the several burners while the passages 23 in the mixer plate, which open into said air space and through which the flames project, form individual air-mixing tubes, thereby insuring complete combustion of the fuel and producing a flame of intense heat.

The enclosure or basket 12 which contains the incandescent fuel 13 is disposed directly over the inner plate 11. In the example shown in the drawings, said mixer plate forms the bottom of the basket while the plates 25, 26, resting edgewise on the mixer plate, form the side and end walls thereof, respectively. These walls are preferably of a knock-down construction, so as to be readily detachable from said mixer-plate, and for this purpose, the side walls are provided at their ends and intermediate their upper and lower edges with hook-like projections or tongues 27 which interlock with corresponding openings 28 located in the end walls near opposite edges thereof. As shown in Figs. 2 and 4, the side plates 25 are substantially flush with the longitudinal edges of the mixer plate 11 while the end plates 26 slightly overhang said edges. Both side and end plates may be provided with openings 29 through which the heat from the burner is expelled or dissipated.

The means for supporting the inner plate above and in spaced relation to the burner body and for reliably retaining or securing the basket-walls 25, 26 to said mixer plate preferably consist of upright stud bolts 30 located at the corners of the burner body and spacing sleeves 31 applied to said bolts and interposed between the top of said burner body and the opposing underside of the mixer plate. Bridge pieces or washers 32 are applied to the top of the basket at the corners thereof, the bolts 30 passing through

said bridge pieces and the nuts 33 serving to lock the several parts in their proper position.

This improved burner is strong, durable and compact in construction, and being composed of few parts can be manufactured at a moderate cost. Furthermore, it is very efficient and reliable in operation, producing a very intense heat and rendering its use practically universal, not only for domestic heating purposes, but also in bake ovens, enameling furnaces, etc.

I claim as my invention:

1. A gaseous fuel burner, comprising a supporting base having a gas-receiving chamber, a plurality of burner-nozzles rising from said base, a mixer-plate surmounting the latter in spaced relation thereto to form a universal mixing space, said space being open and unenclosed on all sides, said

mixer plate having flame openings therein substantially in line with said nozzles, and a retaining wall for incandescent fuel supported on said mixer plate.

2. A gaseous fuel burner, comprising a supporting base having a gas-receiving chamber, a plurality of burner nozzles on said base, bolts rising from the base, a mixer plate engaging said bolts, spacing members applied to said bolts between the top of said base and the underside of said mixer plate, the space between said base and said mixer plate being open and unenclosed on all sides, side and end walls resting on said mixer plate and forming an enclosure for incandescent fuel, and bridge-pieces located at the corners of said enclosure and through which said bolts pass.

ISRAEL B. TAYLOR.