

Dec. 29, 1925.

1,567,622

A. B. SHARP

GAS BURNER

Filed Feb. 24, 1925

FIG. 1

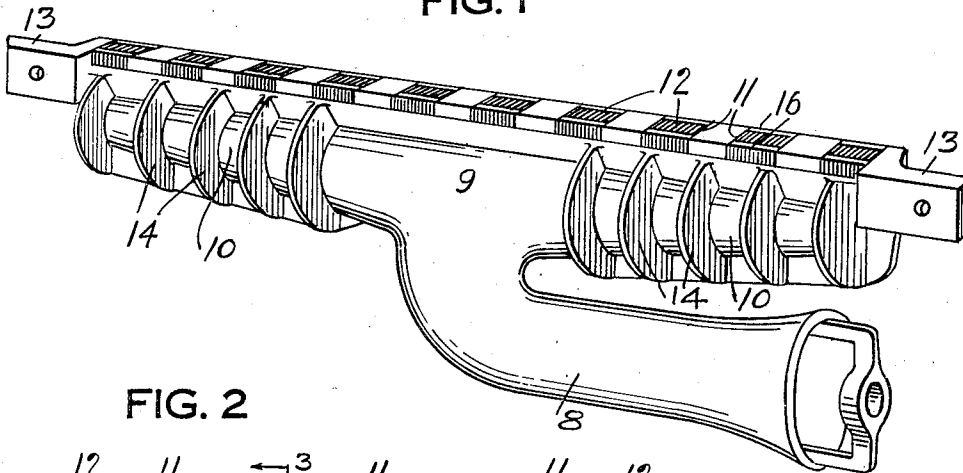


FIG. 2

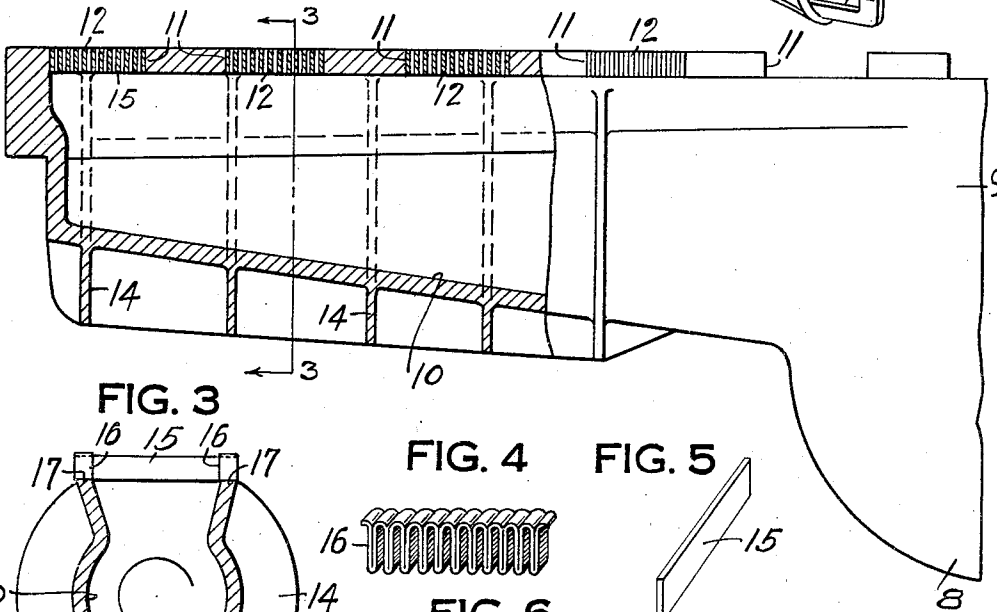


FIG. 3

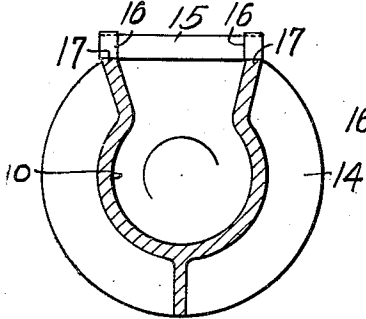


FIG. 4

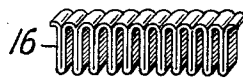


FIG. 5



FIG. 6

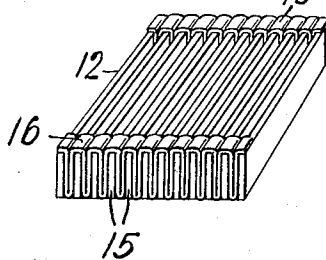


FIG. 7

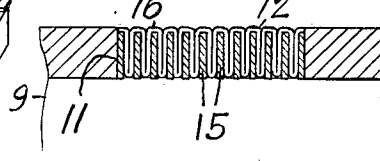
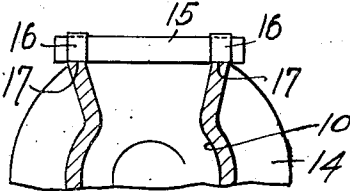


FIG. 8



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GAS BURNER.

Application filed February 24, 1925. Serial No. 11,103.

To all whom it may concern:

Be it known that I, ALEXANDER B. SHARP, a citizen of the United States, and a resident of Steubenville, in the county of Jefferson and State of Ohio, have invented a new and useful Improvement in Gas Burners; and I do hereby declare the following to be a full, clear, and exact description thereof.

10 My invention relates to gas burners, and particularly to burners having a plurality of burner tips or openings.

One object of my invention is to provide means whereby each tip of a burner is supplied with the proper amount of fuel, and whereby the fuel so supplied is prevented from becoming unduly heated before passing through the burner grids or tips.

Another object of my invention is to provide a burner grid possessing improved functional and structural characteristics.

Still another object of my invention is to simplify and improve generally the structure and operation of gas burners.

25 One form which my invention may take is shown in the accompanying drawing wherein Fig. 1 is a perspective view of a burner, constructed in accordance with my invention; Fig. 2 is a view, partially in section, and partially in elevation, on an enlarged scale, of a portion of the burner of Fig. 1; Fig. 3 is a view taken on the line 3—3 of Fig. 2; Fig. 4 is a view of one of the holding members for the bars that enter into the construction of the burner grids; Fig. 5 is a perspective view of one of said bars; Fig. 6 is a view showing the bars and holders as in Figs. 4 and 5, assembled into a unitary structure; Fig. 7 is a cross sectional view of the structure of Fig. 6, and Fig. 8 is a view similar to Fig. 3, but showing the grid bars extended beyond the orifice walls.

The burner comprises an inlet 8 which 45 may be of somewhat the usual form and a chamber 9 into which the inlet leads. The chamber 9 is provided with two channel extensions 10 that are partially circular in cross section, as shown in Fig. 3. The burner body 9 has a top wall that is substantially flat and which is cut away at intervals to provide rectangular openings 11 adapted to receive the burner grids or orifices 12. The burner body 9 is provided

with perforated extensions 13 by means of 55 which it may be mounted in a stove. In the case of a radiant heater, the radiants would be supported above the orifices 12. The chamber portions 10 gradually decrease in cross sectional area toward their outer ends 60 so that the necessary pressure of fuel therein is maintained to effect even distribution of such fuel to the various orifices. The chamber portions 10 have concentric vanes preferably formed integrally therewith. 65 These vanes may be of various forms, and serve to absorb heat from the fuel passing through the burner and to dissipate such heat by reason of their exposure to the outside air. Overheating of the burner is thereby prevented and consequent tendency toward backfiring reduced. 70

The vanes 14 increase in surface area toward the outer ends of the burner portions 10, as shown in Fig. 2. The desirability of this arrangement arises by reason of the fact that as the gas flows toward the orifices at the ends of the burners its temperature increases, and provision must therefore be made to effect a greater absorption of heat 80 therefrom.

The burner units 12 are composed of bars 15 supported in crimped holders 16 preferably of ductile metal. The manner in which the metal is crimped for the reception of bars is shown more clearly in Fig. 4. It will be seen that as the bars are all inserted from the bottom side of the member 16 their upper and lower edges will be in proper horizontal alignment. That is, 85 each bar will be in alignment with the adjacent bars. Also that the bends of the crimped member at either side thereof are in alignment so that a comparatively smooth surface results. Each bar is separated from the next bar by a double thickness of the strip material, thus providing ample space between the bars for passage of gas. 90

After the units have been assembled as 100 shown in Fig. 6 they are driven into the rectangular opening 11 until they occupy the position shown more clearly in Figs. 1 and 7. The holders 16 are disposed immediately above the edges 17 of the side walls 105 of the chamber 9 so that they present no obstruction to the flow of gas through the openings. The units 12 are preferably

made of such thickness that they will be compressed somewhat when driven into the openings 11 and thereby held firmly in position.

5 As shown in Fig. 8, bars 15 are preferably of such length that their ends project beyond the strips 16 and the walls of the orifices 11, so as to increase the cooling properties of the burner.

10 By constructing the tips in the form of units which are inserted in the openings in the burner body, replacement and repairs can readily be made and the body of the burner continued in use even though it becomes distorted through action of the heat and the like, because of the adaptability of the units to openings of various sizes and contours.

I claim as my invention:

20 1. A gas burner comprising an elongated chamber provided with a fuel inlet and with a plurality of openings, and burner grids adapted to be mounted in said openings, each of said grids comprising a unit
25 composed of bars and holding strips that are of accordion or plaited form, the bars being disposed between the folds of said strips.

30 2. A gas burner comprising an elongated chamber provided with a fuel inlet and with a plurality of openings, and burner grids adapted to be mounted in said openings, each of said grids comprising a unit composed of bars and holding strips that are of
35 accordion or plaited form, the bars being disposed between the folds of said strips, and grid units having close fitting engage-

ment with the wall of said recesses but removable therefrom.

3. A burner grid comprising a plurality of bars mounted edgewise and disposed in side by side relation, and held in assembled position by strips bent upon themselves a plurality of times to form folds, each bar
45 lying within a fold.

4. A burner grid comprising a plurality of bars mounted edgewise and disposed in side by side relation, and held in assembled position by strips bent upon themselves a plurality of times to form folds, each bar
50 lying within a fold and only alternate folds containing a bar, whereby each bar is separated from the adjacent bar by a double thickness of the strip material.

5. A burner comprising a plurality of bars mounted edgewise and disposed in side-by-side relation, and held in assembled position by strips bent upon themselves a plurality of times to form folds, each bar lying
60 within a fold and the strips being disposed intermediate the mid and end portions of the bars.

6. A burner comprising a plurality of bars mounted edgewise and disposed in side by side relation, and held in assembled position by strips bent upon themselves a plurality of times, each bar lying within a fold and the folds being so bent that the upper
65 edges of the bars are in relative horizontal alignment.

In testimony whereof I, the said ALEXANDER B. SHARP, have hereunto set my hand.

ALEXANDER B. SHARP.