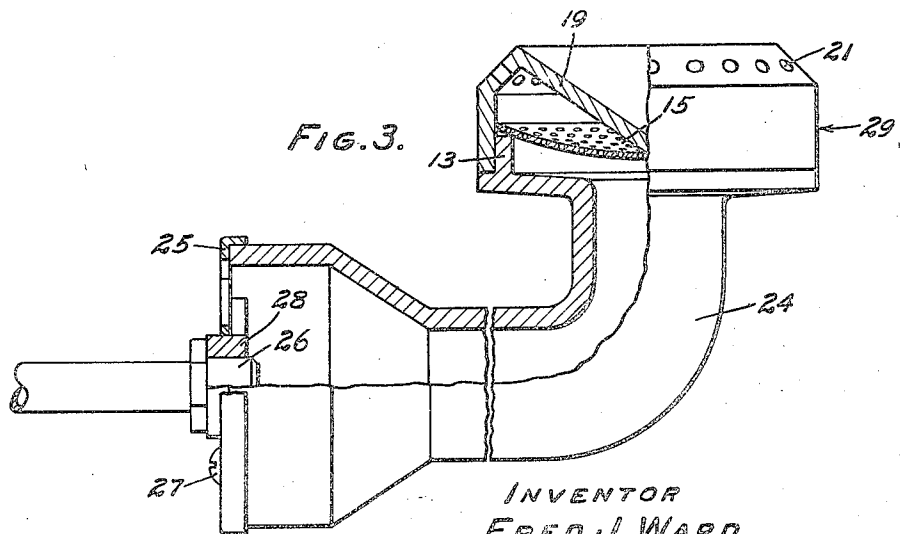
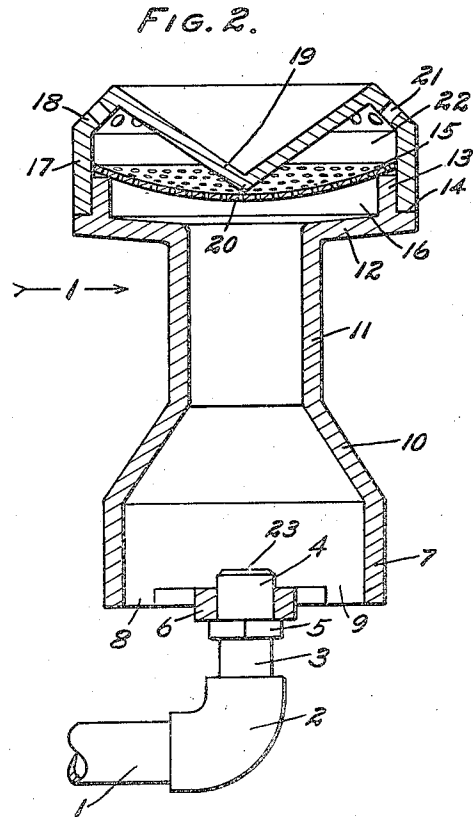
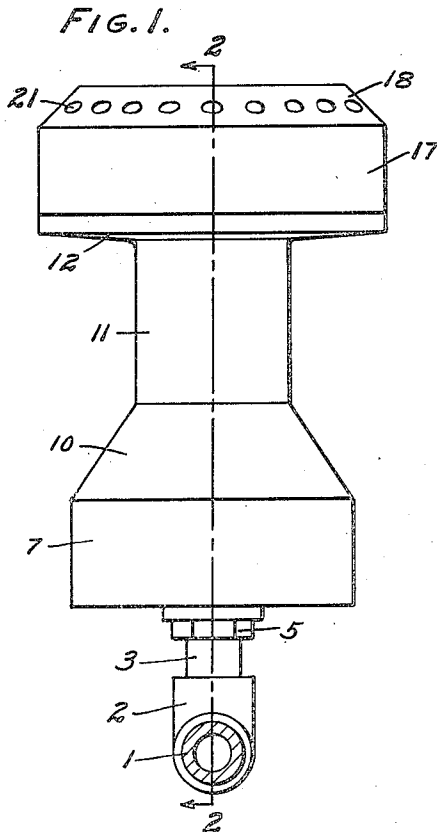


F. J. WARD.
GAS BURNER.
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1,309,922.

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INVENTOR
FRED J. WARD
BY *Hazard & Miller*
ATT'YS.

UNITED STATES PATENT OFFICE.

FRED J. WARD, OF LONG BEACH, CALIFORNIA.

GAS-BURNER.

1,309,922.

Specification of Letters Patent.

Patented July 15, 1919.

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To all whom it may concern:

Be it known that I, FRED J. WARD, a citizen of the United States, residing at Long Beach, in the county of Los Angeles and State of California, have invented new and useful Improvements in Gas-Burners, of which the following is a specification.

My invention relates to gas burners and consists of the novel features herein shown, described and claimed.

Figure 1 is a side elevation of a gas burner embodying the principles of my invention as seen looking in the direction indicated by the arrow 1 in Fig. 2.

Fig. 2 is a vertical diametrical sectional detail on the line 2-2 of Fig. 1.

Fig. 3 is a fragmentary side elevation showing a modified form, parts being shown in section and the mixing tube being horizontal instead of vertical.

Referring to Figs. 1 and 2, the gas pipe 1 is screwed into the lower end of an elbow 2, a nipple 3 is screwed down into the elbow 2, and an orifice 4 is screwed upon the nipple 3. The orifice 4 has a hexagon head 5 forming a wrench seat and a shoulder to support the burner. The supporting crosspiece 6 has a central opening to fit the orifice 4 above the head 5, and a straight annular wall 7 is formed integral with the ends of the crosspiece 6, there being air passages 8 and 9 through the wall at the sides of the crosspiece. The tapered annular wall 10 extends upwardly from the annular wall 7, the straight neck 11 extends upwardly from the tapered annular wall 10, and the burner screen base 12 extends outwardly from the upper end of the neck 11, there being an annular flange 13 extending upwardly from the base 12 near its outer edge, thus producing a shoulder 14 outside of the flange 13. The concavo-convex mixing screen 15 rests upon the flange 13 and bows downwardly, there being a distributing chamber 16 within the flange 13 below the screen 15.

The burner screen comprises the straight annular wall 17 fitting closely around the flange 13 and resting upon the shoulder 14, the inwardly inclined upwardly extending annular perforated wall 18 extending from the upper edge of the straight wall 17, and the inverted conical wall 19 extending inwardly and downwardly from the upper inner edge of the wall 18, the point 20 of the wall 19 resting upon the center of the mixing screen 15 to press the screen against the flange 13

and hold the screen in place. The perforations 21 through the wall 18 are inclined at an angle of about 45° and lead from the mixture chamber 22 above the screen 15.

The point 20 of the burner screen is in direct line with the orifice outlet 23 and at the axial center of all the parts, so that the gas discharging from the orifice 23 will draw air through the openings 8 and 9, mix the air and gas in the neck 11, and distribute the air and gas to the chamber 16, and the air and gas will pass through the screen 15 and form a perfect combustible mixture in the chamber 22 and be discharged through the apertures 21 and burn against the outer face of the wall 18. The cone 19 serves materially in directing the force of the draft to the openings 21. In cross section the lines of the cone 19 are parallel with the lines of the openings 21.

Referring to Fig. 3, the neck 24 is elongated and curved to a right angle, so that the inlet is horizontal and a shutter 25 is placed in position to regulate the openings around the orifice 26. The shutter 25 is held in place by a screw 27 inserted through a slot in the shutter and tapped into the supporting crosspiece 28. The burner head 29 is identical with that shown in Figs. 1 and 2.

Various changes may be made without departing from the spirit of my invention as claimed.

I claim:

1. A gas burner comprising a supporting crosspiece having a central opening to fit an orifice, a straight annular wall formed integral with the ends of the crosspiece and forming air passages at the sides of the crosspiece, a tapered annular wall extending upwardly from the straight annular wall, a straight neck extending upwardly from the tapered annular wall, a burner screen base extending outwardly from the upper end of the neck and having an annular flange extending upwardly into its edge and forming a shoulder outside of the flange, a concavo-convex mixing screen resting upon the annular flange and a burner screen having a straight annular wall fitting around the flange upon the shoulder, an inclined annular perforated wall extending upwardly and inwardly from the straight annular wall, and an inverted cone extending downwardly and inwardly from the upper edge of the inclined wall and fitting against the center of the mixing screen.

2. In a gas burner, a neck, a burner screen base extending outwardly from the upper end of the neck and having an annular flange extending upwardly into its edge and forming a shoulder outside of the flange, a concavo-convex mixing screen resting upon the annular flange and a burner screen having a straight annular wall fitting around the flange upon the shoulder, an inclined annular perforated wall extending upwardly and inwardly from the straight annular wall, and an inverted cone extending downwardly and inwardly from the upper edge of the inclined wall and fitting against the center of the mixing screen.

In testimony whereof I have signed my name to this specification.

FRED J. WARD.