

UNITED STATES PATENT OFFICE.

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GAS-BURNER.

No. 917,728.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN M. HARE, a citizen of the United States of America, residing at Belle Vernon, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Gas-Burners, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to gas burners, and the primary object of my invention is the provision of simple and effective means for obtaining a perfect combustion of air and gas for producing a flame of high caloric intensity.

15 Another object of this invention is to provide a burner that can be advantageously used in connection with a "hot plate" or a gas range.

20 A further object of this invention is to provide a burner with a rarefying chamber adapted to place the gas in a more inflammable condition before the same is ignited.

25 A still further object of this invention is to provide an odorless, smokeless and inexpensive burner that can be used in connection with a Bunsen burner.

30 With the above and other objects in view the invention consists in the novel construction, combination and arrangement of parts to be presently described and then specifically pointed out in the appended claims.

35 In the drawings:—Figure 1 is a cross sectional view of my burner, and Fig. 2 is a plan of the same.

40 To put my invention into practice, I provide a Bunsen burner or tube 1 with a peripheral flange 2 for supporting a cylindrical casing 3, said casing near its upper end having a horizontal partition 4 provided with a central flanged opening 5 for the upper end of the tube or burner 1. The bottom of the casing 3 is provided with openings 6 for admitting air to the casing and the partition 4 is provided with openings 7 for allowing the air to pass out of the upper end of the casing 3 and commingle with the gas from the Bunsen burner or tube 1.

45 The casing 3 adjacent to the upper end thereof is provided with a peripheral flange 8 and supported upon said flange is a pan 9 having inclined walls 10 provided with a peripheral flange 11. The pan 9 is formed with a central opening 12 to receive the upper end of the casing 3, and adjacent to

the inclined walls 10 is provided with an annular groove 13. In the annular groove 13 is supported a cylindrical drum 14 and upon the upper edges of this drum is mounted a circular plate 15, said plate having an annular groove 16 to receive the upper edges of the drum 14. The plate 15 is of a less diameter than the inner diameter of the top of pan 9, whereby a circular slot 17 will be formed around the edges of the plate 15.

65 Upon the partition 4 within the drum 14 is supported a mixing chamber 18 adapted to receive the air from the casing 3 and the gas from the burner or tube 1, the air and gas commingling in the chamber 18, and eventually escaping through an opening 19 provided therefor in the top of the chamber. The mixed air and gas entering the drum 14 is rarefied by being heated by the plate 15 when the burner is in operation, consequently when the air and gas escape through openings 20 provided therefor in the drum 14, and the slot 17, the mixed air and gas will be in an inflammable condition and can be ignited at the slot 17.

80 I have illustrated the burner as supported in a hot plate 21 by the peripheral flange 11 of the pan 9, and a receptacle or utensil placed upon the burner is supported by radially disposed ribs 22 of the plate 15, these ribs being in a plane with the upper surface of the hot plate 21.

85 A burner constructed in accordance with my invention, produces heat units of a high caloric intensity, consequently, I obtain considerable heat from my burner with a minimum expenditure of gas. The plate 15 serves to disseminate the commingled air and gas ejected from the mixer 18, and the air and gas is equally distributed from the drum 14 by virtue of the circumferentially arranged openings 20 which are in direct communication with the circular slot 17.

90 While in the drawings forming a part of this application there is illustrated the preferred embodiments of my invention, it is to be understood that the elements therein can be varied or changed without departing from the spirit of the invention.

95 Having now described my invention what I claim as new, is:—

1. In a burner, the combination with a bunsen tube, of a casing surrounding said tube and supported thereby, said casing having a partition formed therein provided with

a central opening to receive the upper end of said tube, said partition and said casing having openings formed therein, a pan supported by the upper end of said casing, said
5 pan having inclined flanged walls, a drum supported in said pan, said drum having a plurality of circumferentially arranged openings formed therein, a circular plate supported by said drum, and in a plane with the upper
10 per edges of the side walls of said pan, and providing a circular slot between the edges of said plate and the side walls of said pan, a mixing chamber supported upon the partition of said casing, said chamber having an
15 opening formed therein for admitting air and gas to said drum, and radially disposed ribs arranged upon said plate, substantially as described.

2. The combination with a bunsen tube,
20 of a casing supported thereby, said casing having openings formed therein for admitting air, a pan supported by said casing, a drum arranged within said pan, a plate supported by said drum and being of a less diameter
25 than said pan for providing a circular

slot at the edges of said pan, a mixing chamber supported by said casing, said chamber having an opening formed therein for admitting air to said drum, and said drum having openings formed therein for admitting air
30 and gas to said circular slot.

3. The combination with a burner, of a casing surrounding said burner and having air inlet openings formed therein, a pan supported by said casing, a drum arranged in
35 said pan, a plate supported by said drum and providing a circular slot at the edges of said pan, a mixing chamber supported by said casing and having an opening formed therein for admitting air and gas to said
40 drum, and said drum having openings formed therein establishing communication with said slot.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN M. HARE.

Witnesses:

ED. J. MACKEY,
JAMES CAMERON.