Sept. 25, 1945. H. E. MILLS 2,385,528

GAS BURNER

Filed Nov. 1, 1941

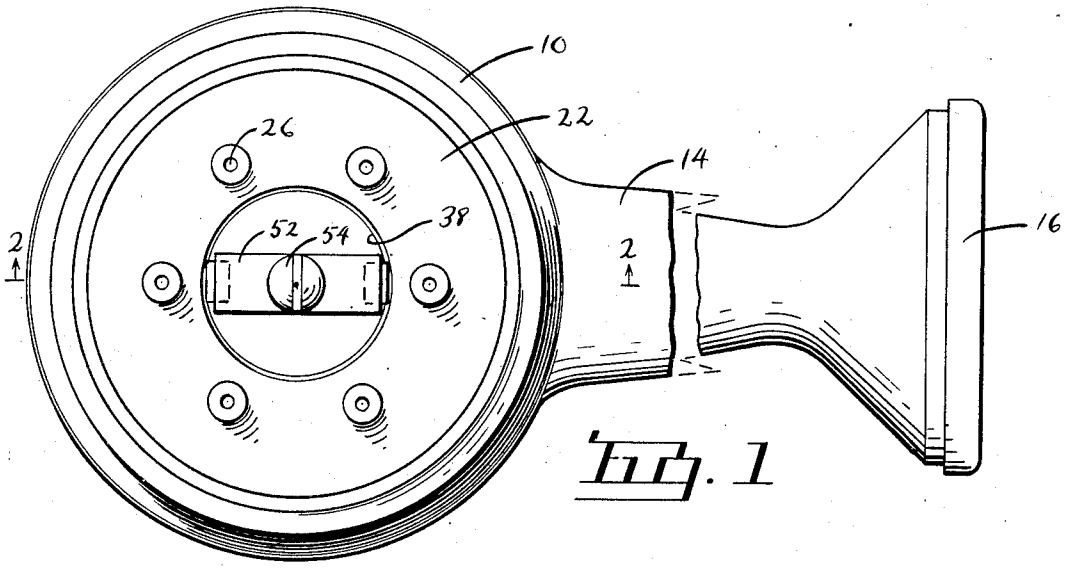


Fig. 1

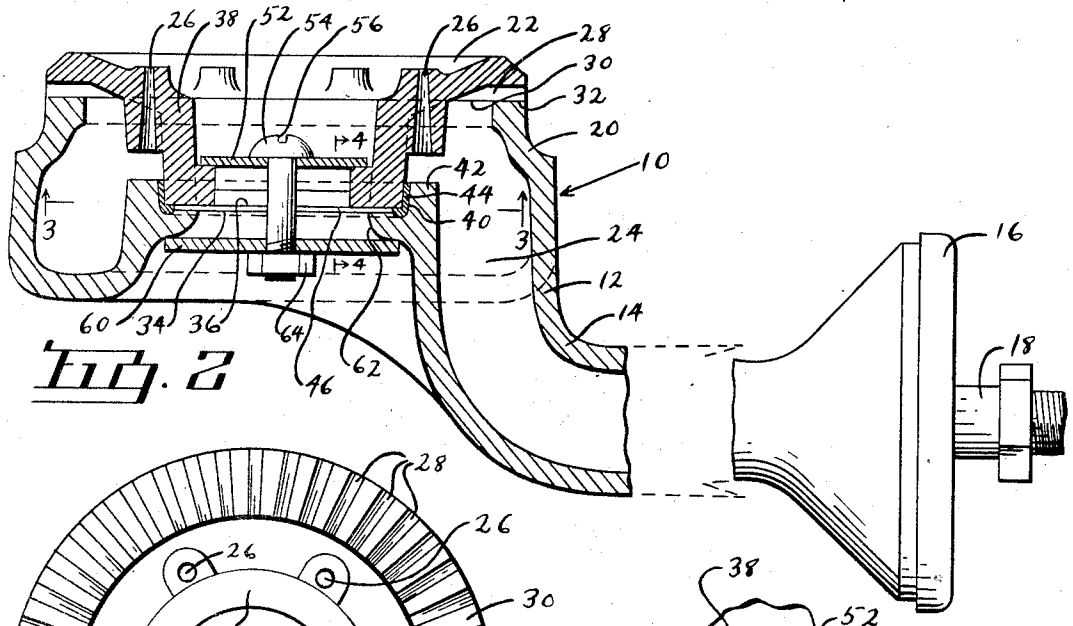


Fig. 2

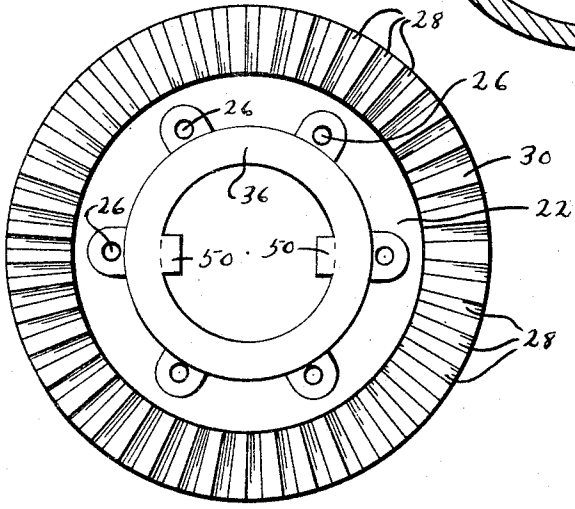


Fig. 3

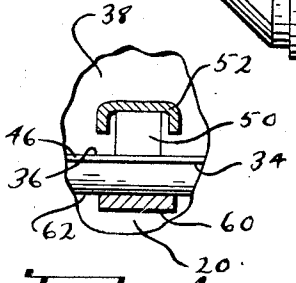


Fig. 4

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GAS BURNER

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Application November 1, 1941, Serial No. 417,535

2 Claims. (Cl. 158—116)

This invention relates to gas burners and is particularly adapted although not limited for use as a burner of a cooking range.

A principal object of the invention is to provide a novel and improved type of gas burner.

Another object of the invention is to provide a gas burner with a removable refractory or ceramic burner head.

Another object of the invention is to provide a novel and convenient assembly of a gas burner having a removable head.

Another object of the invention is to provide a dependable and inexpensive means for securing a refractory or ceramic burner head to the main body thereof.

Other objects and advantages of the invention will be apparent from a consideration of the following specification taken in conjunction with the accompanying drawing of which there is one sheet, and wherein:

Fig. 1 is a plan view of a burner embodying the invention;

Fig. 2 is a vertical sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is a bottom plan view of the ceramic burner head; and

Fig. 4 is a sectional view taken in a plane along the line 4—4 of Fig. 2, looking in the direction of the arrows.

The burner 10 as illustrated comprises an annular hollow section or part 12, a tubular part or conduit 14 for supplying fuel to the annular part 12, an air valve 16 adapted to be operatively and removably associated with a nipple 18 of a gas supply manifold which is adapted to supply gas to the interior of the conduit 14 wherein the same is mixed with air admitted through the valve 16.

The hollow annular part 12 of the burner is formed of two separable members 20 and 22. The member 20 may be formed integral with tubular part or conduit 14 in a casting and form the main body member of the burner. The main body part 20 of the burner forms an annular gas conducting channel 24 open at the top and which is adapted to have removably secured thereto the removable refractory burner cap or head 22.

The burner cap or head 22 comprises an integral member formed of ceramic or refractory or other material and may be formed to provide a plurality of vertically extending burner ports 26 and a series of radially extending grooves 28 on the under face 20 of said member and at the periphery thereof. The face 30 which is relieved by the grooves 28 is arranged in a plane and is adapted to be seated on a plane surface 32 formed at the upper end and at the outer periphery of the member 20.

The inner periphery of the member 20 is formed to provide an annular plane surface 34 which forms a seat for a complementally shaped surface 36 formed on the under side of the member 22 at the inner periphery thereof. The surface 36 is formed at the end of an annular projection 38 which depends from the upper part of the member 22. Outwardly of the surface 34 a well 40, formed in part by an upstanding annular wall 42 of the member 20, is provided for receiving and retaining a sealing medium or compound such as cement indicated at 44. Before assembly of the head 22 to the member 20 the well 44 is filled with cement and the surfaces 34 and 36 also may be covered with cement. When the surfaces 34 and 36 are brought together by the clamping means hereinafter described, the cement will be squeezed out from between the surfaces 34 and 36 until the surface 30 seats on the surface 32. A film of cement indicated at 46 preferably remains between the surfaces 34 and 36 for sealing or bonding the same together, while the well 44 which is filled with cement will also provide a further seal between the outer surface of the annular part 38 and the inner surface of the wall 42.

The thickness of the film 46 of the sealing compound 44 will, of course, depend upon the clearance between the surfaces 34 and 36 when the surface 30 is seated on the surface 32. Preferably the surfaces 30 and 36 of the refractory member 22 are spaced a distance slightly less than the distance between the faces 34 and 32 of the member 20 so as to allow for limited variations in the manufacture of these parts.

The refractory member 22 may be provided with two or more inwardly extending lugs 50 projecting inwardly from the wall of the portion 38 thereof. These lugs 50 form a seat for a U-shaped clamping or bar member 52 which is provided with a hole through which a screw 54 depends. The screw 54 may be provided with a kerf 56. A clamping member or bar 60 seated against an annular shoulder 62 formed on the body 20 extends across the central opening in the body and is provided with an opening through which the screw 54 extends. Below the bar or strip 60 a nut 64 threadedly secured to the threaded part of the screw 54 is provided for holding the strip 60 in position against the shoulder 62. When the screw 54 is tightened the spaced clamping members 52 and 60 bearing against the parts of the head 22 and the body 20

will securely clamp the same in operative relationship.

The radially extending grooves 28 formed on the face 30 cooperate with the upper surface 32 of the member 20 to form a series of gas emitting ports at the outer periphery of the burner, while the ports 26 formed in the member 20 provide an inner series of gas emitting ports around the central opening in the burner. The central opening in the burner is formed by the annular portion 38 of the head 22 and the similarly shaped portion of the body 20 below the portion 38. Except for the space occupied by the clamping members 52 and 60, the central opening in the burner is unobstructed and therefore available to supply air to the burner ports 26.

The refractory or ceramic material of which the burner head 22 is formed is a fused clay which has heat resisting qualities so as to be resistant to deterioration resulting from the burning of gas at the ports 28 and 26. This material when fused is frangible and cannot be successfully threaded. The assembly herein illustrated provides a very dependable and simple construction for a gas burner having a refractory head. The particular form of the burner and the arrangement of the ports may, of course, be varied.

While the invention has been described with some detail, it is to be understood that the description is for the purpose of illustration only and is not definitive of the limits of the inventive idea. The right is reserved to make such changes in the details of construction and arrangement of parts as will fall within the purview of the attached claims.

I claim:

1. In a gas burner a body member forming a part of a gas supply passage and having a pair of seats, one on each side of said passage, a head member having seats adapted to cooperate with said seats of said body member for completing said passage, said head member being formed with gas emitting ports communicating with said passage, means providing a well for sealing material adjacent one of said seats and formed by portions of said members, the seats of said body member being spaced vertically a distance at least slightly greater than the seats of said head member, clamping means for securing said members together, said clamping means including spaced bars, the ends of which bear against said members, a threaded member reacting against the center of said bar on said head member and threaded means reacting against the bar associated with said body member and coacting with said threaded member to hold said body and head members in operative relationship.

2. In a gas burner a body member having an annular channel forming a part of a gas supply passage and having a pair of spaced, continuous, marginal seats, one arranged on each side of said passage, a head member having spaced seats adapted to cooperate with said seats of said body member for completing said passage, said head member being formed with gas emitting ports communicating with said passage, the seats of said body member being relatively spaced a distance slightly greater than the relative spacing of the seats of said head member, sealing means cooperable with those seats of said body and head members which, due to the relative spacing of said seats, do not contact each other, and clamping means for securing said members together, said clamping means including spaced elongated clamping members, the edges of which bear against portions of said members, said clamping members being separable from said members, a threaded member reacting against an intermediate part of that clamping member associated with said head member and threaded means reacting against that clamping member associated with said threaded member to hold said head and body members in operative relationship.

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