

Dec. 12, 1933.

A. H. SWAIN

1,939,240

GAS BURNER

Filed Sept. 19, 1932

2 Sheets-Sheet 1

Fig. 1.

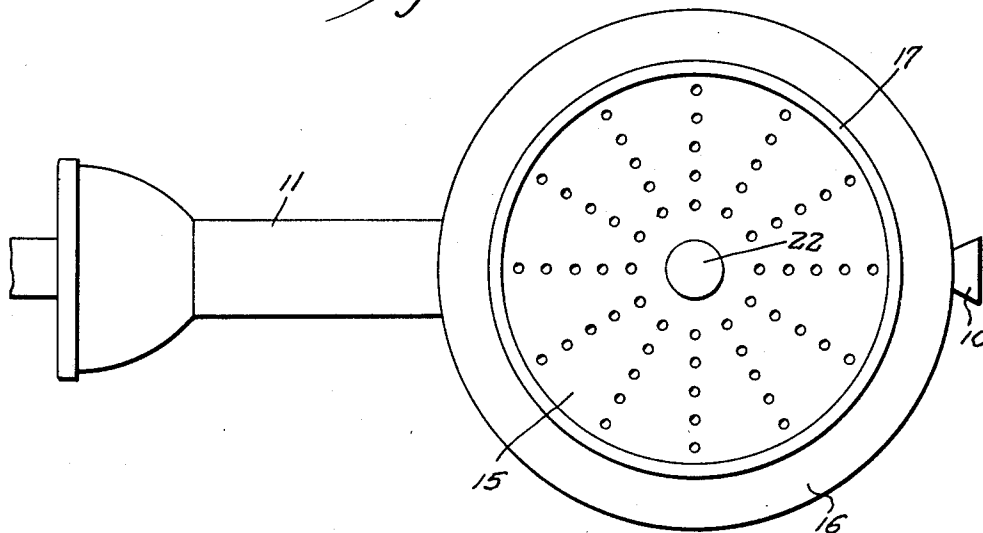


Fig. 2.

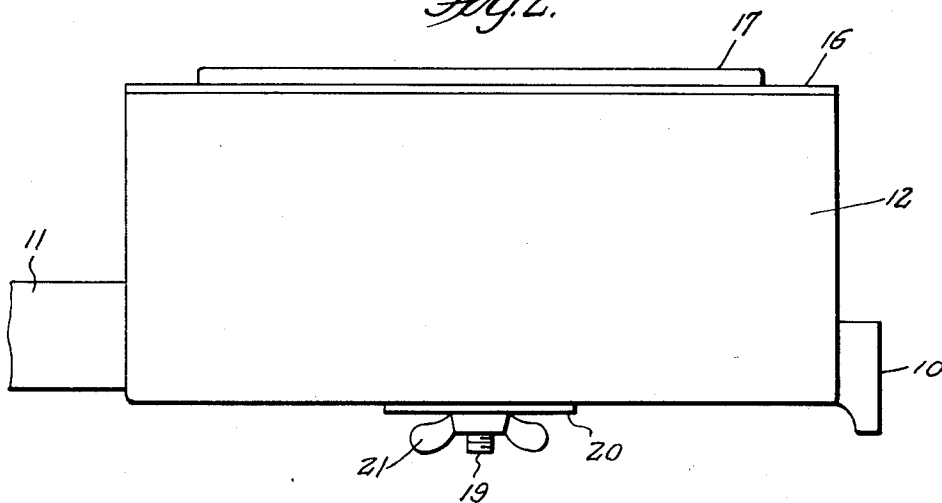
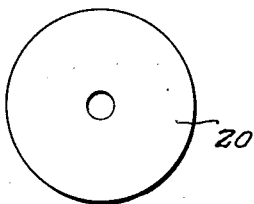


Fig. 6.



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Fig. 3.

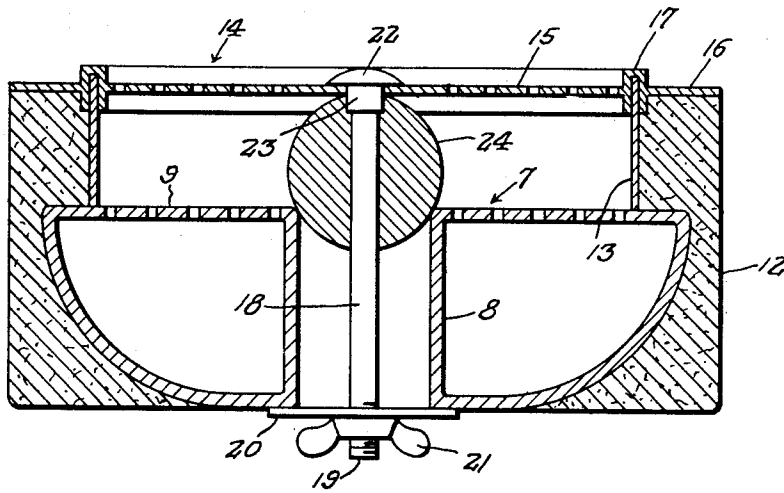


Fig. 4.

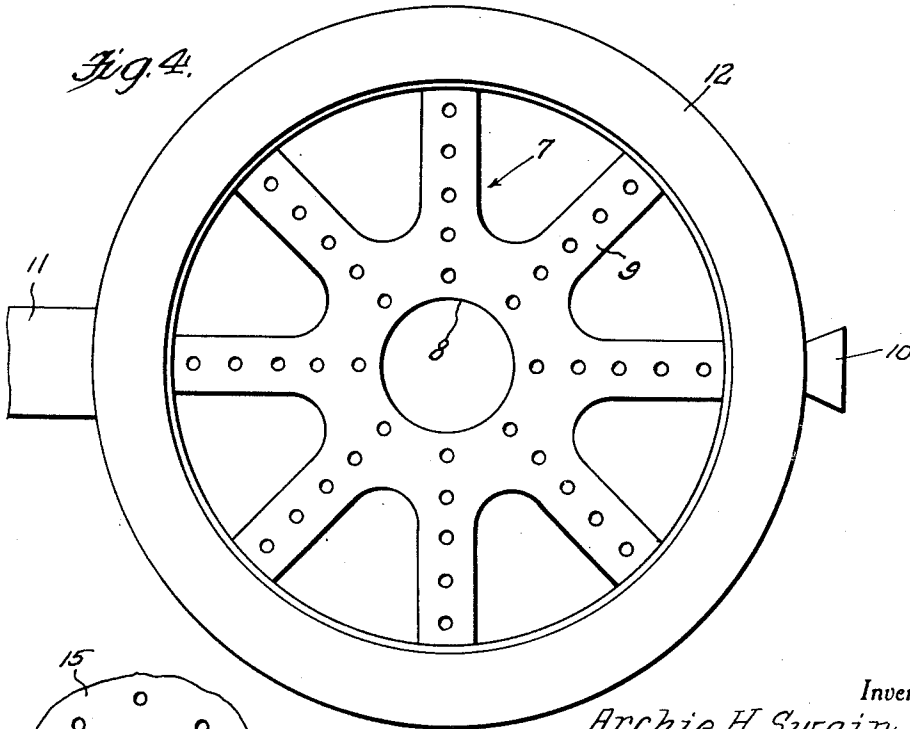
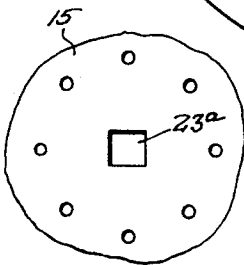


Fig. 5.

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UNITED STATES PATENT OFFICE

1,939,240

GAS BURNER

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Application September 19, 1932
Serial No. 633,879

6 Claims. (Cl. 158—113)

This invention relates to a new and improved type of gas burner for use in connection with kitchen ranges, household heating systems and the like.

5 The principal feature of novelty is predicated upon a unique enclosure in which the burner head per se is effectively housed, wherein said enclosure incorporates additional structural features destined to promote flame concentration and uniform and intense heat distribution, whereby to render the improved structure particularly desirable for heating cooking utensils.

10 One structural feature of the improved arrangement is an annular casing for the burner-head wherein said casing is constructed of proper refractory materials such as a combination of fireclay and asbestos for heat concentration and conserving purposes.

15 Another feature of the invention is predicated upon an insulated casing of the aforesaid type provided with a flame confining chamber having a metal lined wall intended to provide for longevity of the casing.

20 A further structural feature is predicated upon the adoption and use of a ball-like flame deflector and spreader properly located to protect the central portion of the cooking utensil against burning.

25 Other features and advantages will become more readily apparent from the following description and drawings.

In the drawings:

30 Figure 1 is a top plan view of a burner construction developed in accordance with the principles of the present inventive conception.

35 Figure 2 is a side view of the structure illustrated in Figure 1, showing the parts on a slightly enlarged scale.

40 Figure 3 is a central vertical sectional view through the principal parts of the construction.

Figure 4 is a top plan view of Figure 1 with the cover plate removed.

Figure 5 is a fragmentary plan view of the central portion of said cover plate.

45 Figure 6 is a detail view.

Referring now to the preferred embodiment of the invention as pictorially illustrated in the drawings, it will be observed that the burnerhead per se is denoted by the numeral 7. This is in the form of a hollow casting and includes a centralized vertical open-ended neck 8 and a plurality of circumferentially spaced radially ported flame jet branches 9.

50 The numeral 10 merely designates a supporting lug and 11 a diametrically opposed gas supply

pipe. In accordance with the present invention, the burnerhead is embedded in a refractory casing 12. Externally, this casing is of ring-like form and it is constructed on its interior to permit the branches 9 of the burnerhead to be effectively embedded and supported therein.

60 The casing is of greater vertical dimension than the burnerhead and that part extending above the top of the burnerhead defines a flame confining chamber. That wall of the chamber which is exposed directly to the flame is protected by an annular collar or lining 13 whose upper edge extends above the top of the casing.

70 The numeral 14 designates a cover which includes an apertured disc 15, an annular supporting flange 16 resting on the top of the casing 12 and an intervening retaining ring 17 of channel-shaped cross section which fits down over the upper protruding edge portion of the collar 13. The cover 14 is maintained in place by a bolt 18 whose threaded end 19 extends down through the neck 8 and through a central opening in a sustaining washer 20, said threaded end being provided with a thumb nut 21.

75 The headed end 22 is formed with a polygonal portion 23 fitting into a correspondingly shaped central hole 23a in the disc 15.

80 The numeral 24 designates a metal ball having a central bore through which the bolt extends. This ball is proportioned to rest in the upper end portion of the neck 8 so that the ball underlies the central portion of the disc and serves as a flame spreader in order to deflect the flames outwardly and to prevent overheating of the central portion of the disc whereby to protect the corresponding portion of the cooking utensil (not shown).

85 The casing 12 together with the especially designed cover 14 forms an enclosure for the burner head or casting 7. As before pointed out, the enclosure is somewhat larger than the burner head itself so as to define a flame concentration and confining chamber above the burnerhead, the flame wall of said chamber being protected by a removable metallic lining or collar 13. Novelty is predicated upon this closure together with the retaining bolt for the cover wherein said bolt has the additional function of a mounting for the flame spreading and deflecting ball 24. All of the parts are separable with the exception of the parts 7 and 12 which are joined together as a single unit. This permits repair and adjustment, as well as effective cleaning.

100 It is thought from the foregoing description that the advantages and novel features of the 110

invention will be readily apparent. It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts provided that such changes fall within the scope of the appended claims.

I claim:

1. In a structure of the class described, a substantially annular casing, a hollow burnerhead casting embedded in the lower half portion of said casing, that portion of the casing projecting above the burner head defining a flame concentration chamber, a removable metallic lining collar for the flame wall of said chamber, and a detachable cover plate for said casing and chamber.

2. In a structure of the class described, a substantially annular casing, a hollow burnerhead casting embedded in the lower half portion of said casing, that portion of the casing projecting above the burnerhead defining a flame concentration chamber, a removable metallic lining collar for the flame wall of said chamber, and a detachable coverplate for said casing and chamber, said cover plate including a central apertured disc-like portion, a marginal flange seated on the adjacent portion of the casing, and an intervening channel-shaped retaining ring receiving the adjacent edge portion of said collar.

3. In a structure of the class described, a burnerhead embodying a hollow casting including a central open-ended neck and a plurality of radially apertured branches and a protective casing of refractory material in which said head is embedded, a removable protective collar associated with said casing, a removable protective cover associated with the collar and casing, a bolt for

said cover extending down through the neck of the burner, retaining means for said bolt.

4. In a structure of the class described, a burnerhead embodying a hollow casting including a central open-ended neck and a plurality of radially apertured branches and a protective casing of refractory material in which said head is embedded, a removable protective collar associated with said casing, a removable protective cover associated with the collar and casing, a bolt for said cover extending down through the neck of the burner, retaining means for said bolt, and a ball-like flame deflector mounted on the upper portion of said bolt and underlying the cover and seated in the upper end portion of said neck for the purposes described.

5. In a structure of the class described, a casing, a hollow burner head casting embedded in the lower portion of said casing, that portion of the casing projecting above the burner head defining a flame concentration chamber, a metallic lining collar for the flame wall of said chamber, and a cover plate for said casing and chamber.

6. In a structure of the class described, a casing, a burner head in the lower portion of the casing, that portion of the casing projecting above the burner head defining a flame concentration chamber, a metallic lining collar for the flame wall of said chamber and projecting slightly above the upper surface of the casing, and a cover plate for said casing and chamber, said cover plate including a central apertured disk like portion, a marginal flange seated on the adjacent portion of the casing, and an intervening channel shaped retaining ring receiving the adjacent edge portion of said collar.

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