

Dec. 4, 1934.

G. RUGGIERO

1,983,244

BURNER

Filed May 26, 1932

2 Sheets-Sheet 1

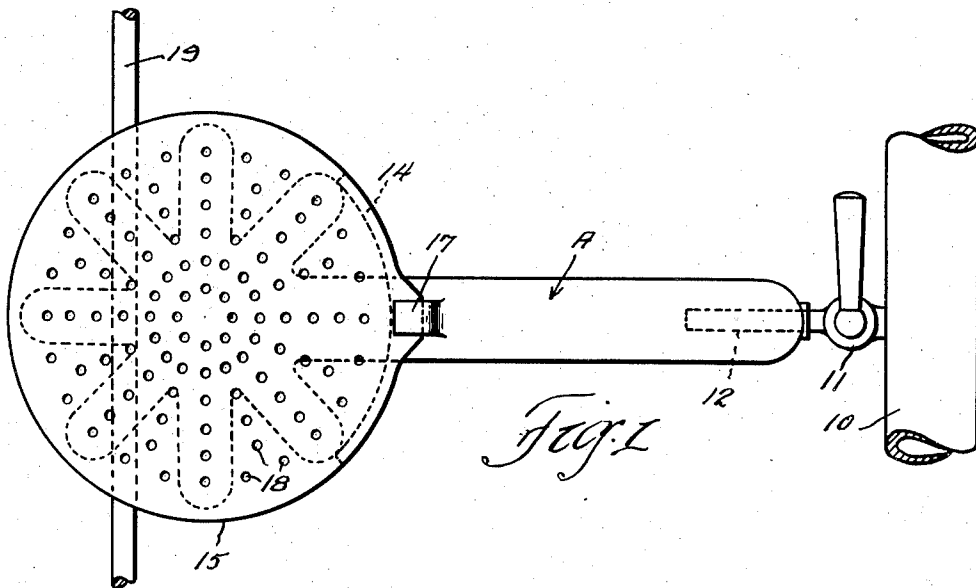
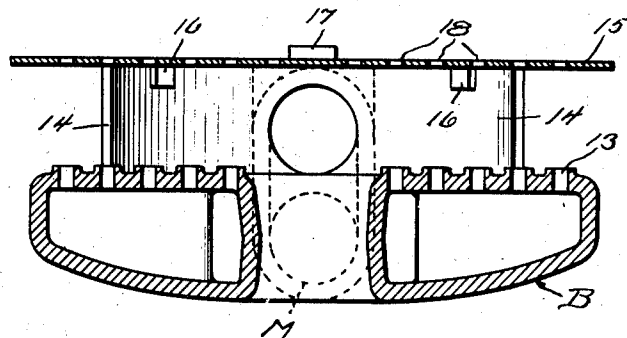
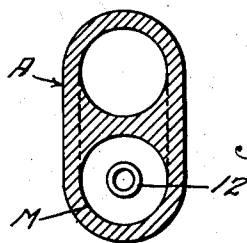


Fig. 5

Inventor

Gennaro Ruggiero

By *Hell Brockelst*

Attorney

Dec. 4, 1934.

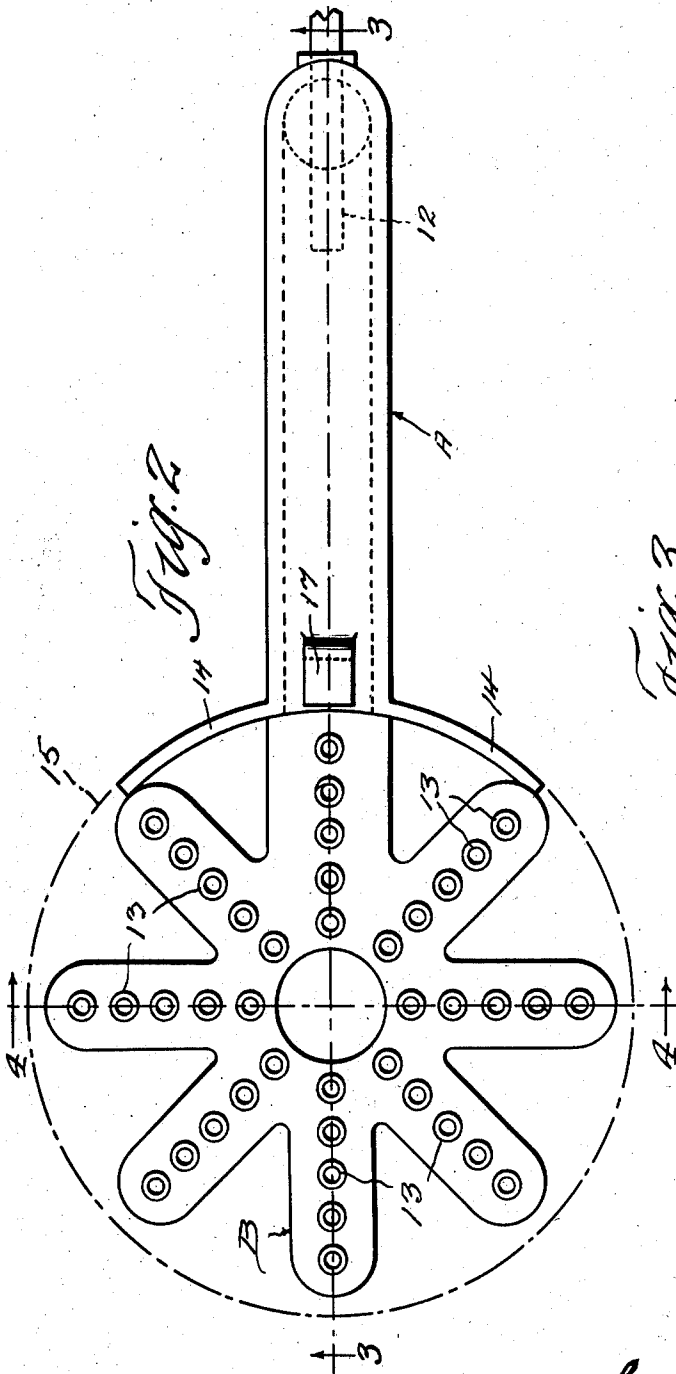
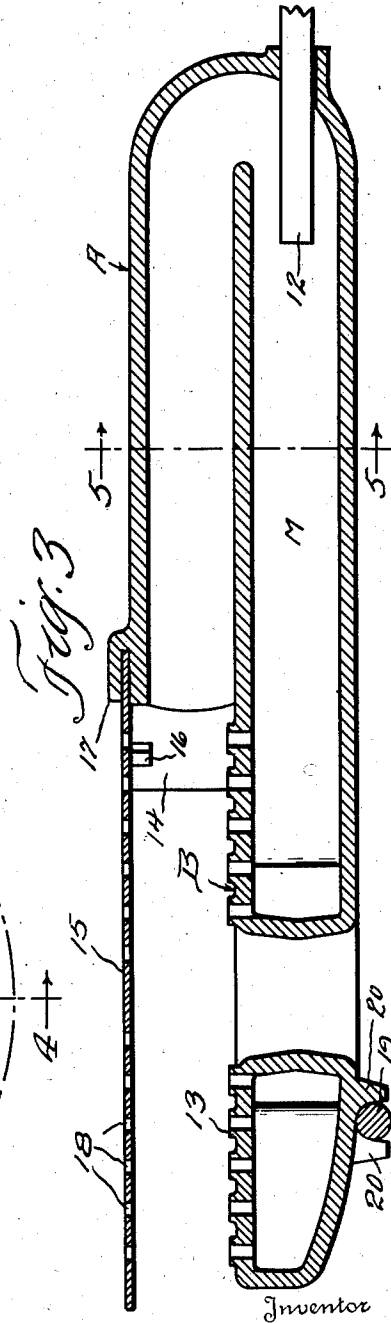
G. RUGGIERO

1,983,244

BURNER

Filed May 26, 1932

2 Sheets-Sheet 2



Gennaro Ruggiero

By *Hull Brockwell*
Attorney

UNITED STATES PATENT OFFICE

1,983,244

BURNER

Gennaro Ruggiero, Cleveland, Ohio

Application May 26, 1932, Serial No. 613,684

1 Claim. (Cl. 158—108)

This invention relates to a gas or similar gaseous fuel burner and has for its principal object to secure more nearly complete combustion of the fuel and a higher temperature relative to the amount of fuel consumed. A further object is to prevent the escape of incompletely burned or unburned fuel and other harmful products of combustion into the atmosphere of the room in which the device operates.

With these and other and more limited objects in view the invention consists in the construction and arrangement of parts hereinafter described and pointed out in the appended claim. While the device is susceptible of use in other relations it is described with particular reference to its use in domestic ranges and is so illustrated in the accompanying drawings in which Fig. 1 is a plan view; Fig. 2 is an enlarged fragmentary plan view with the cover plate removed; Fig. 3 is a section on the line 3—3 of Fig. 2; Fig. 4 is a section on the line 4—4 of Fig. 2; and Fig. 5 is a section on the line 5—5 of Fig. 3. Figs. 3 and 4 show the cover plate in position while Fig. 2 shows it removed.

Referring now to the drawings the numeral 10 indicates a fuel supply manifold which conventionally is placed at the front of a domestic range and from which the various burners derive their fuel supply. Connected with the manifold 10 is a valve 11 which may be connected in communication with the interior thereof in any suitable manner and which is provided with an elongated injector tube 12. The burner assembly may consist of a casting or equivalent indicated generally by the reference character A and having formed therein a U-shaped passage. One end of the U-shaped passage is in continuous communication with the burner portion proper B of the burner assembly. This burner portion is of conventional construction and need not be described in detail. It may be of the radial type shown or any other well known construction. The injector tube 12 extends into the leg of the U-shaped passage which is in communication with the burner portion B to a point well beyond the bight thereof whereby to cause the gaseous fuel and air to flow toward the burner portion B. The other leg of the U-shaped passage extends backwardly and terminates adjacent the flame carrying portion 13 of the burner portion B. This passage may have associated therewith the wings 14 and a foraminous plate 15 adapted to direct the currents of air and other gases in the vicinity of the flame carrying portion 13 of the burner into the U-shaped passage. The plate

15 may be supported by projections 16 on the wings 14 operating in conjunction with a tongue 17 which overlies the edge of such plate. The plate 15 may be provided with any suitable number of perforations 18 for allowing a limited passage of gases upwardly therethrough. The burner assembly may be supported by a rod 19 placed thereunder and extending between the lugs 20 or by any other suitable supporting means.

In operation gaseous fuel is admitted through the manifold 10 past the valve 11 and through the injector tube 12 into the U-shaped passage, the adjacent portion M of which may be termed a mixing chamber. Primary air flows through the other branch of the U-shaped passage under the influence of the injector action and mixes with the fuel in the mixing chamber M. The primary air is forced to come from the region adjacent to and immediately above the flame carrying portion of the burner whereby to collect combustible gases from that region along with the primary air. In this way the unburned portions of the fuel and such combustible gases as may be formed by incomplete combustion (for example, carbon monoxide) are returned with the primary air to the burner where they will be completely burned. The construction will, of course, result in mixing with the primary air some non-combustible gases but this will serve only to make the mixture leaner and can be compensated for in the design of the burner either by the original size determinations or by some adjustable means for varying the amount of primary air admitted.

While I have shown and described the preferred embodiment of my invention I wish it understood that I am not limited to the details thereof but only in accordance with the spirit and scope of the appended claim.

Having thus described my invention, what I claim is:

In a device of the character described, a burner portion, a mixing chamber communicating therewith, a fuel injecting tube extending into said mixing chamber toward said burner and adapted to be connected with a source of gaseous fuel, and means forming a passage for primary air communicating with said mixing chamber and terminating in a plate overlying said burner portion and spaced thereabove.

GENNARO RUGGIERO.