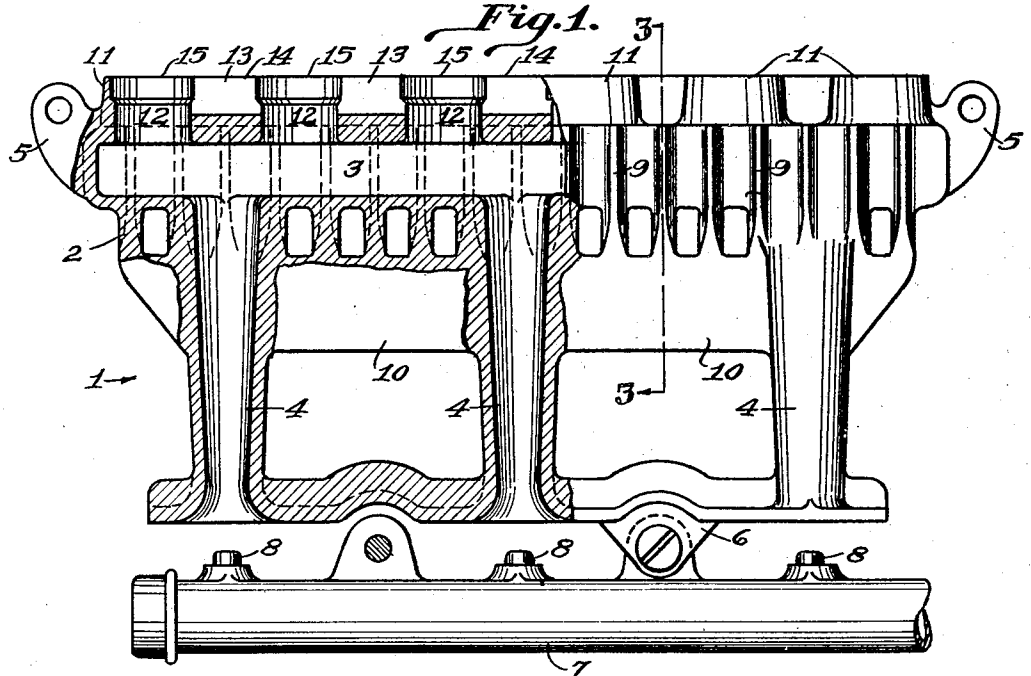
Jan. 9, 1934. R. F. CUYLER 1,942,397

GAS BURNER

Filed May 1, 1931

Fig.1.



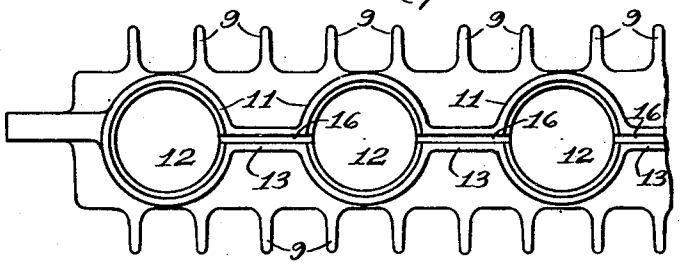


Fig.2.

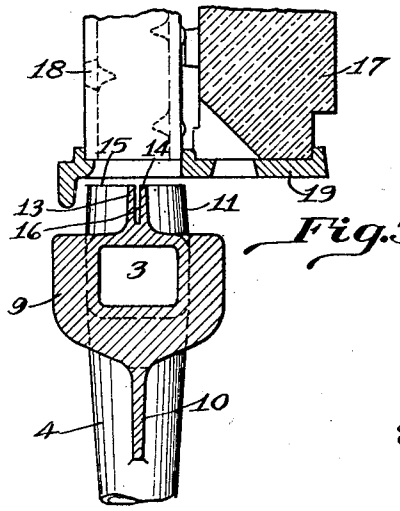


Fig.3.

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GAS BURNER

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Application May 1, 1931. Serial No. 534,327

6 Claims. (Cl. 158—104)

This invention relates to gas burners and more particularly to a burner manifold for use in gas heaters of the radiant type.

In the use of gas heaters of the radiant type heretofore made difficulty has been experienced in igniting the gas issuing from the burner so as to cause the combustion of all of the gas issuing therefrom. In such gas burners heretofore made, when a lighted match or taper is applied to one glower the gas passing upward within that particular glower is ignited and it is necessary to cause combustion to take place over the surface of the glower by applying a lighted match or taper to each of the glowers in succession.

It is an object of my invention to provide a gas burner manifold which when used may be employed in gas heaters of the radiant type wherein are employed a plurality of glowers and which permits all of the gas passing into the glowers to be ignited instantly upon the ignition of the gas in any one of the glowers.

With this and other objects in view, which will appear as the description proceeds, the invention consists in the novel features of construction, combinations of elements and arrangements of parts hereinafter to be more fully described and pointed out in the appended claims.

In the accompanying drawing:

Figure 1 is an elevation partly in central longitudinal section of the burner manifold constructed in accordance with my invention,

Figure 2 is a top plan view of the burner manifold shown in Figure 1,

Figure 3 is a vertical sectional view taken on the lines 3—3 of Figure 1 but showing associated portions of the heater in vertical section.

Referring more particularly to the drawing, the numeral 1 designates my improved burner manifold in its entirety which includes a casting 2 which is so formed as to define a horizontal passage 3 and vertical tubes 4 which discharge into the horizontal passage 3. The manifold is provided with the usual lugs 5 for attachment to the body of the heater and with depending lugs 6 which carry the gas supply manifold 7. The gas supply manifold 7 is provided with the usual nozzles 8 in alignment with the tube 4.

In order to keep the temperature of the burner manifold as low as possible the casing is formed to include a plurality of heat dissipating fins 9 which extend around the sides and bottom of the passage 3. The fins are preferably tapered towards their outer edges and are joined, at their bottom edges, by a longitudinal fin 10 which extend between the tubes 4 and projects from the end faces of the outer tube.

The upper surface of the casting 2 is provided with a plurality of laterally spaced aligned burner tips 11 each of which is formed to include a burner opening 12 communicating with the horizontal passage 3. Extending between the burner tips 11 are webs or fins 13, the upper edges 14 of the webs 13 being preferably in the same horizontal plane as the upper edges 15 of the burner tips 11. Extending longitudinally of the webs 13 and through the side walls of the burner tips 11 are relatively narrow slots 16 which at their upper edges communicate with the exterior of the manifold and at either end with the burner openings 12. I prefer that the slots 16 be formed so as to be situated substantially in the vertical plane of the axes of the burner tips.

My improved burner manifold is especially desirable and efficient when used in a gas heater of the radiant type as illustrated in Figure 3 of the drawing, in which heaters the fire brick backing 17 and the glowers 18 are supported above the burner manifold 1 by a supporting plate or frame 19 with the glowers 18 in registration with the burner tips 11 and with their lower ends adjacent thereto.

It will thus be seen that in my improved burner manifold the slots 16 provide for a certain amount of lateral escapement of the gas mixture from each of the burner tips 11 so that upon the ignition of the gas mixture issuing from any one of the burner tips the flame travels along the upper edge of the slot to the adjoining burner opening in which manner the gas mixture issuing from all parts of the burner manifold is ignited. The use of my improved manifold does away with the necessity of applying a lighted match or taper to the glowers in succession in order to insure that all of the gas passing through the burner is ignited but provides for the ignition of all the gas upon the application of the lighted taper or match at any point above the burner.

What is claimed is:

1. In a burner, a horizontally extending manifold provided with a longitudinal passage and having its upper wall formed to include a plurality of laterally spaced aligned burner openings communicating with said passage, and longitudinally extending slots formed in said upper wall between each of said burner openings and communicating with the interior of said burner openings and along one edge with the exterior of said manifold, the bottom of said slots being closed and spaced from the interior of said manifold.

2. In a burner, a horizontally extending manifold provided with a longitudinal passage and having its upper wall formed to include a plurality of laterally spaced aligned burner openings communicating with said passage, and longitudinally extending slots formed in said upper wall between each of said burner openings, said slots being closed at the bottom and communicating with the interior of adjoining burner openings with their horizontal openings open to the exterior of said manifold and in the same horizontal plane as said burner openings.

3. A burner manifold for use in a radiant heater formed to include walls defining a horizontal passage, spaced burner tips extending above said passage and formed with openings communicating with said passage, webs extending above said passage walls between said burner tips, and slotted passageways extending longitudinally of said webs and into said burner openings, the bottoms of said passageways being closed by the upper wall of said manifold.

4. In a burner, a horizontally extending manifold provided with a longitudinal passage, a plurality of laterally spaced aligned burner tips formed with the upper side of said manifold and provided with axial openings communicating with said passage, longitudinally extending webs uniting said burner tips and situated in the vertical plane of the axes of said burner tips, and slots extending longitudinally of said webs and through the side walls of said burner tips, said slots being above said longitudinal passage and separated therefrom by the upper wall thereof but in communication with the exterior of said manifold along the upper horizontal edges of said webs.

5. A burner manifold for use in a radiant heater formed to include walls defining a horizontal passage, spaced burner tips extending above said passage and formed with openings communicating with said passage, and webs extending above said passage walls between said burner tips, said webs being formed with passageways extending longitudinally thereof and into said burner openings, each of the passageways in said webs being closed at its bottom and open to the atmosphere at its top.

6. A burner manifold for use in a radiant heater formed to include walls defining a horizontal passage, spaced burner tips extending above said passage and formed with openings communicating with said passage, and means extending above said passage walls connecting said burner tips, said means being formed with passageways open to the atmosphere and having their ends communicating with said burner tips, each of said passageways being closed at its bottom.

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