J. HICKS.

GAS BURNER FOR FURNACES.

APPLICATION FILED APR. 27, 1917.

1,237,780. Patented Aug. 21, 1917.

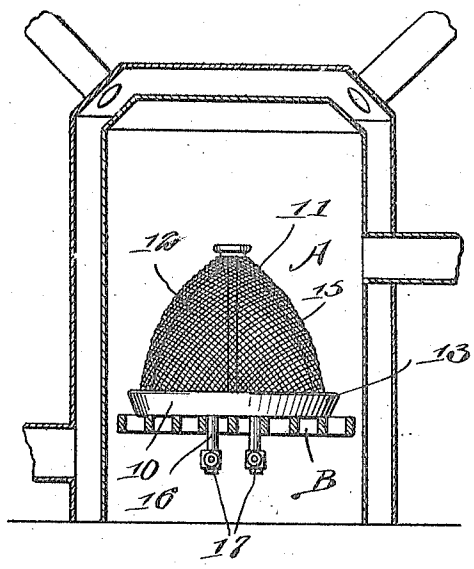


Fig. 1

Fig. 2.

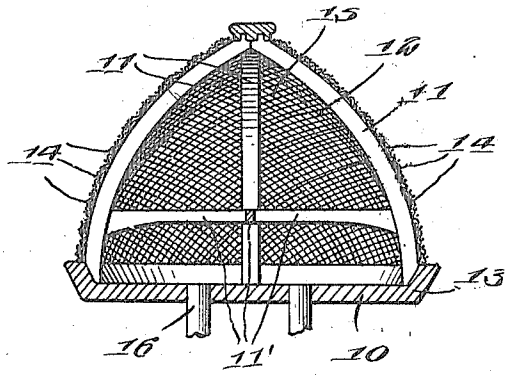
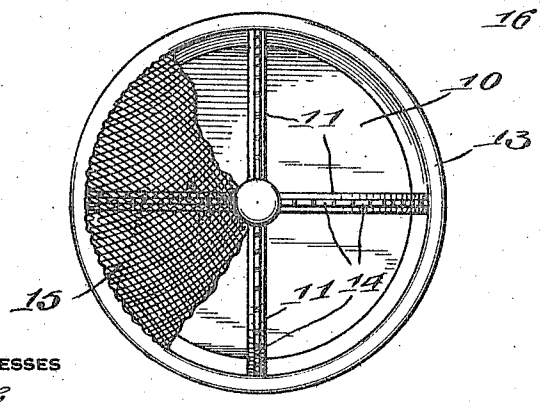


Fig. 3



WITNESSES

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GAS-BURNER FOR FURNACES.

1,237,780. Specification of Letters Patent. Patented Aug. 21, 1917.

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To all whom it may concern:

Be it known that I, JOHN HICKS, a subject of the King of Great Britain, residing at Calgary, in the Province of Alberta and Dominion of Canada, have invented new and useful Improvements in Gas-Burners for Furnaces, of which the following is a specification.

This invention relates to heating devices and particularly to mixing and combustion chambers for use in connection with hot air furnaces, vertical boilers, hot water heating and the like.

The primary object of the invention is to provide an auxiliary combustion and mixing chamber which may be placed upon a stove or furnace and supported upon the grate bars in a manner to permit gas or other fuel being supplied thereto, said chamber embodying a base, skeleton ribs, a mantle preferably formed of thorium supported upon said ribs, the ribs having projections for engagement of the mantle the whole forming a dome shaped mixing chamber in which the gas and air are held for proper mixture and combustion, for the purpose of heat generation.

Other objects and advantages of the invention will appear from the following description, when read in connection with the accompanying drawings, in which—

Figure 1 is a vertical sectional view through a furnace having the invention applied thereto;

Fig. 2 is an enlarged central vertical sectional view of the combined combustion and mixing chamber; and

Fig. 3 is a top plan view with part of the mantle broken away.

In the drawings, there is illustrated a hot air furnace of any approved type, which is provided with the usual firebox or combustion chamber A and grate bars B. The invention designed to be placed within the firebox comprises a base 10 and supporting ribs 11, said ribs being arch shaped and diametrically disposed to provide a dome like chamber 12.

The base 10 and ribs 11 are preferably formed of fire clay composition or chemical ware, so as to withstand the action of the heat. Surrounding the base 10 is an annular flange 13 and as the said base and ribs are separately formed, this flange provides for the expansion of the ribs. Beneath each of the ribs 11 are other ribs or flanges 11′, which extend from a point approximately centrally of the length of the dome. In practice when the burners are lighted, the flame strikes the inside ribs 11′ and is remixed and diffused equally all over the inside of the combustion chamber, otherwise, with the use of the natural gas, the top of the mantle would be blown off.

The ribs 11 have formed upon their outer edges a series of projections 14 for the purpose of aiding in holding and supporting the gas mantle 15, which is adapted to be positioned over the ribs to complete the mixing chamber, the said gas mantle being preferably formed of metallic thorium.

Suitable burners 16 are adapted to supply gas or other fuel within the mixing chamber, valves 17 being provided for the purpose of controlling these burners.

The right is reserved to make such changes in the form and proportion of the invention as will fall within the scope of the claims hereto appended.

Having described the invention, what is claimed is:

1. A combustion chamber embodying a dome shaped skeleton frame composed of diametrically disposed arch shaped ribs, a gas mantle adapted to cover said ribs and projections carried by said ribs for engagement with the gas mantle.

2. A combustion chamber embodying a dome shaped skeleton frame composed of diametrically disposed ribs, a gas mantle adapted to cover said ribs and projections carried by the said ribs for engagement with the gas mantle.

3. The combination with a furnace, of an auxiliary combustion chamber adapted to be supported upon the grate thereof, said chamber embodying a dome shaped skeleton frame composed of diametrically disposed arch shaped ribs, a gas mantle adapted to cover said ribs and means carried by said ribs for engagement with the mantle.

4. A combustion chamber embodying a skeleton frame, a gas mantle positioned over said frame and means located within said chamber for remixing and diffusing the gases.

5. A combustion chamber embodying a skeleton frame, a gas mantle positioned over said frame and means including diametrically arranged ribs located within the com-

bustion chamber for remixing and diffusing the gases.

6. A combustion chamber embodying a skeleton frame, a gas mantle positioned over said frame and a removable base supporting said frame to permit of the independent expansion and contraction of the frame.

7. A combustion chamber embodying a skeleton frame, a gas mantle positioned over said frame and means located within the gas mantle for remixing and diffusing the gases.

In testimony whereof I affix my signature.

JOHN HICKS.