J. H. BACON.

GAS BURNER ATTACHING MEANS.

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1,387,827.

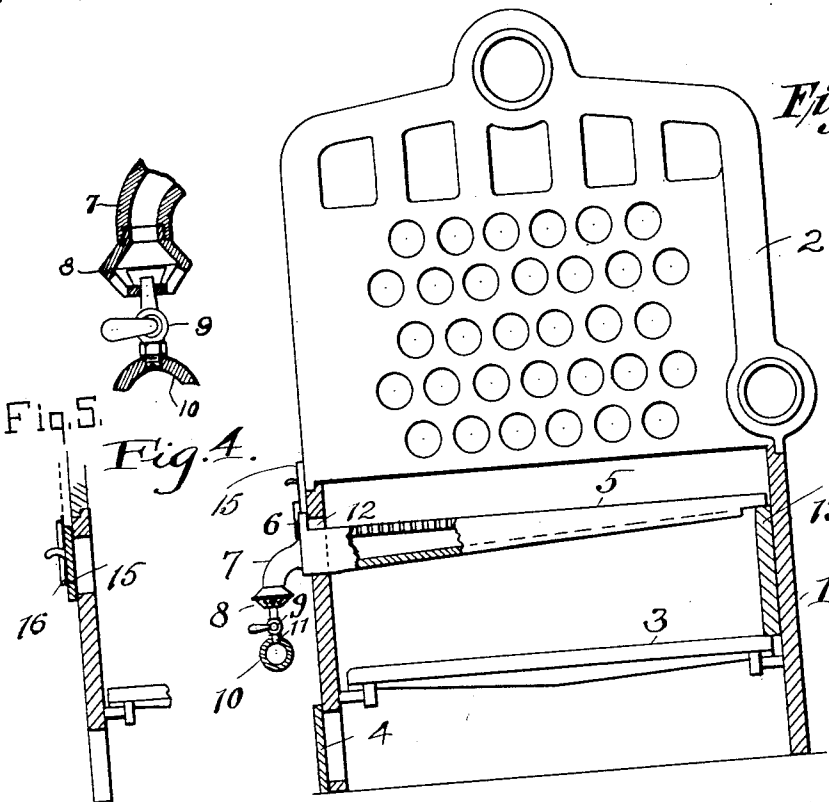


Fig. 1.

Fig. 5.

Fig. 4.

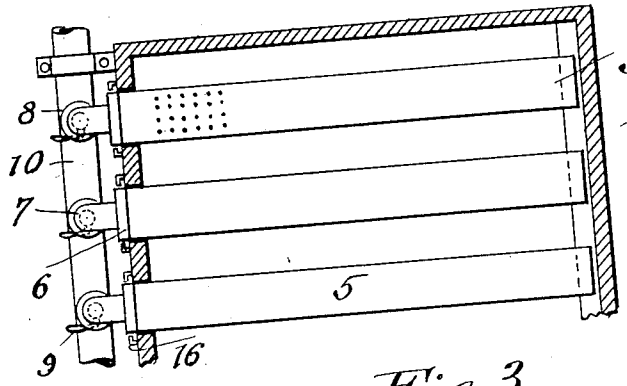


Fig. 2.

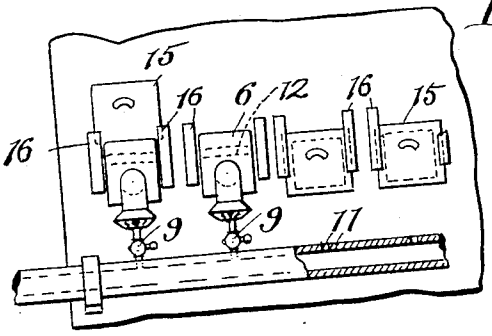


Fig. 3.

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UNITED STATES PATENT OFFICE.

JOSEPH H. BACON, OF LAKEWOOD, OHIO, ASSIGNOR TO THE BACON HEATER MANUFACTURING COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

GAS-BURNER-ATTACHING MEANS.

1,387,827. Specification of Letters Patent. Patented Aug. 16, 1921.

Application filed April 30, 1917. Serial No. 165,346.

To all whom it may concern:

Be it known that I, JOSEPH H. BACON, a citizen of the United States, residing at Lakewood, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Gas-Burner-Attaching Means, of which the following is a full, clear, and exact description.

This invention relates to a water heating device. The object of the invention is to provide such a device wherein the water containing portion may be heated either by the use of gas as a fuel or coal as a fuel, and to provide such a construction that the device may be easily and quickly inserted to burn either form of fuel.

Generally speaking, the invention may be said to comprise the elements and combinations thereof set forth in the accompanying claims.

Reference should be had to the accompanying drawings forming a part of this specification, in which Figure 1 is an elevation with portions in section of a device embodying my invention; Fig. 2 is a top plan view with portions in section showing the gas burners; Fig. 3 is a front elevation of a portion of the device with parts in section; Fig. 4 is a sectional elevation showing a detail of construction.

Fig. 5 is a cross section of the gas and air mixer.

Referring to the drawings and more particularly to Fig. 1, there is shown a base portion 1, which is substantially rectangular in shape and has side walls, the lower portions of the side walls resting upon the foundation for the device. Above the base portion 1 there is a water containing portion which is generally represented at 2. This water containing portion may assume various forms. In the present instance it is made up of a number of sections, the general configuration of which being shown in Fig. 1. These sections are suitably joined together and provide spaces between them through which spaces the products of combustion may rise and heat the water contained within the sections.

Within the base portion there are a plurality of grate bars, one of which is indicated at 3. These grate bars extend throughout the length of the base portion and beneath the grate bars is a space forming an ash pit, ashes being removed through the opening closed by the door 4.

Above the grate bars there are a series of burners generally represented at 5. These burners are hollow and are formed with openings at the top portion through which the gas to be burned may escape. At the outer end each burner is provided with an extension 6, the function of which will be later described. The end of the burner is also provided with a downwardly extending neck or pipe 7 to which is secured a mixer 8.

Extending alongside of the water device is a gas header 10, this gas header being connected with some source of gas which is not indicated. The top of the gas header 10 is provided with openings, one of which is indicated at 11 in Fig. 3, and into each opening the end of a valved pipe 9 is secured. Each mixer has a central opening which slips over the end of one of the valved pipes 9, thereby permitting easy detachment.

The front of the base portion 1 is provided with a series of openings 12. These openings are preferably rectangular in form and conform in general shape with the squared end of the burner 5, so that when a burner is inserted through one of the openings 12, the side and bottom portions of the opening guide the burner as it is inserted through the opening.

The opening 12 is a little higher than the height of the burner at the forward portion, thus permitting the forward end of the burner to be raised so that the pipe 7 and its mixer 8 may be lifted out of engagement with its corresponding pipe 9 in the header 10 when it is desired to disengage the burner.

The extension 6 on the forward part of the burner extends upwardly upon the front of the base so as to close the opening 12 above the burner.

The rear end of the burner rests upon any suitable projection such as that indicated at 13 at the rear end of the base 1 so that the forward part of the burner is supported within the opening 12, while the rear part is supported upon the member 13.

It will be apparent from the description, that a gas burner may be very readily removed from the furnace by merely grasping

the pipe 7 and slightly raising the burner until the mixer disengages its pipe 9 after which the burner may be easily withdrawn from the base. The operation is in reverse order carried out, in inserting a burner in the base.

Each opening 12, is, when the burner has been removed from the base, closed by a slide 15. This slide is guided in suitable strips 16, and when the burner is inserted is normally pushed up above the opening as indicated in Fig. 3. As soon, however, as the burner is removed, the slide falls down so as to close the opening 12.

Having thus described my invention, what I claim is:—

1. A combustion chamber having an opening in a wall thereof, a burner extending through said opening, the said opening being slightly higher than the height of the burner at the corresponding portion thereof, the burner being free to be inserted or moved through said opening, a pipe and mixer carried by the forward end of each gas burner, a gas header supported adjacent the combustion chamber and a valved pipe in the said gas header with which the mixer has a slip connection.

2. A combustion chamber having an opening in a wall thereof, a burner extending through said opening, a downwardly curved pipe secured to the said burner, a mixer carried by said pipe, a gas header supported adjacent the combustion chamber, a valved pipe extending from the said header, the said valved pipe being adapted to slip into the mixer, the said opening in the combustion chamber being slightly higher than the height of the burner at the corresponding portion thereof whereby the burner may be slightly elevated to withdraw the mixer from the header so that the burner with its attached parts may be withdrawn as a unit from the base portion.

3. A combustion chamber having an opening in a wall thereof, a burner extending through said opening, the said opening being slightly higher than the height of the burner at the corresponding portion thereof, said burner having a flange at the forward portion thereof which extends above the burner and adapted to engage upon the outside of the opening in the combustion chamber thereby to close said opening when the burner is in place, a pipe secured to the burner, a mixer carried by said pipe, a gas header and valved pipe secured thereto, the valved pipe having a slip connection with the mixer.

4. A combustion chamber having an opening in a wall thereof, a burner extending through said opening, the forward end of said burner being supported in the said opening, a second support within the combuston chamber which receives the rear end of the burner, said opening in the combustion chamber being slightly higher than the height of the burner, the corresponding portion thereof whereby the burner may be elevated and removed from the combustion chamber, a pipe carried by the burner, a mixer carried by the pipe, a gas header and valved pipe secured thereto, the valved pipe having a slip connection with the mixer.

5. A combustion chamber having an opening in a wall thereof, a burner extending through said opening, the forward end of the burner being supported in the said opening, a second support within the combustion chamber and adapted to support the rear end of the burner, the said opening in the combustion chamber being slightly higher than the height of the burner of the corresponding portion thereof, said burner having a flange adjacent its forward end which lies upon the outside of said opening and engages the wall of the combustion chamber to close said opening when the burner is inserted, a downwardly extending pipe carried by the burner, a mixer carried by said pipe, a gas header and valved pipe associated therewith, the said valved pipe having a slip connection with the mixer.

In testimony whereof, I hereunto affix my signature.

JOSEPH H. BACON.