J. H. BACON.

WATER HEATING DEVICE.

APPLICATION FILED MAR. 8, 1917.

1,322,865. Patented Nov. 25, 1919.

Fig. 1.

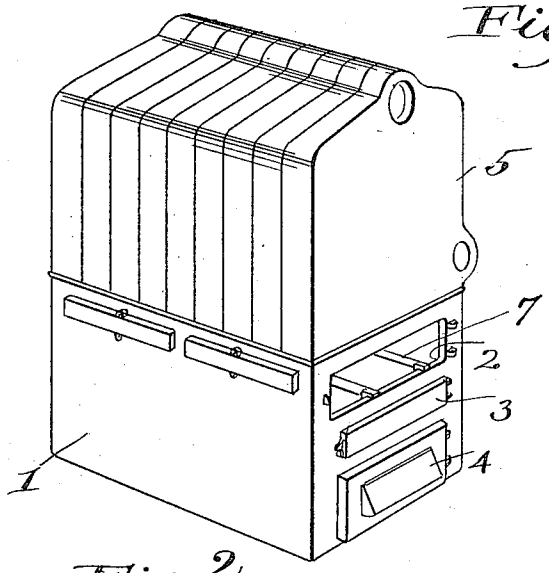


Fig. 2.

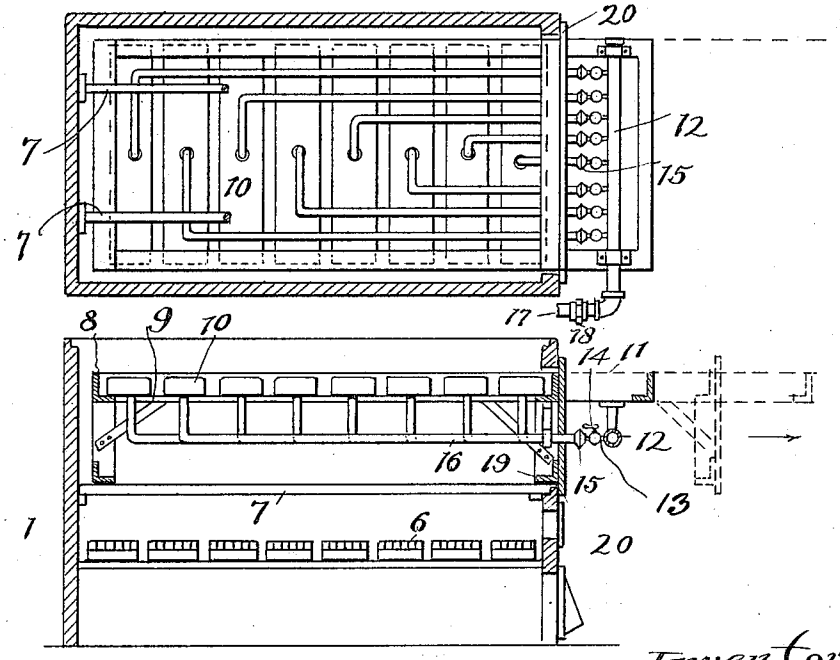


Fig. 3.

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UNITED STATES PATENT OFFICE.

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WATER-HEATING DEVICE.

1,322,865. Specification of Letters Patent. Patented Nov. 25, 1919.

Application filed March 8, 1917. Serial No. 153,402.

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 Water-Heating Devices, of which the following is a full, clear, and exact description.

This invention relates to a water heating apparatus of what is known as the convertible type and derives its name from the fact that two independent instrumentalities for supplying heat and the water containing portion are provided. Preferably these independent instrumentalities adapt the apparatus for use of gas as a fuel or for the use of solid fuel.

In using such an apparatus with solid fuel as the heat supplying means, it is necessary and desirable to remove the gas burners.

It is the object of this invention to provide such a construction for a convertible water heating device as shall make the removal of the burners a simple operation which may be easily and conveniently accomplished.

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 a perspective view of a furnace adapted to embody my invention the burner structures being omitted; Fig. 2 is a sectional view from beneath the furnace showing a plan of the burners and burner carrying means; Fig. 3 is a sectional elevation of the base of a water heating device embodying my invention.

Referring to the drawings, the base of the water heating apparatus is indicated at 1. This base is at one end provided with an opening 2 which, when the furnace is used to burn a solid fuel, will be closed by a suitable door not shown, but the form and function of which is well known in the art. At 3 there is represented the usual clinker door and at 4 is shown the usual ash pit door.

Mounted upon the base 1 is the water containing portion 5, which in the instance shown, embodies a plurality of independent sections or units, each of which is adapted to contain water, and which are secured to each other in any desired manner, and are mounted upon the base so that the heated products of combustion may pass between the sections as is well-known practice in the art.

Within the base portion and at the lower part of the base there are arranged a series of transversely extending grate bars 6 which are suitably supported and mounted in a manner which is well-known in the art.

Above the grate bars there are two or more longitudinally extending bars 7 which at their ends are supported in the end portions of the base. Above these bars 7 there is a frame generally represented at 8. This frame may be conveniently formed of angle iron or of any other form which will provide a bottom ledge such as indicated at 9. The ledges 9, serve to support the ends of burners which are generally represented at 10. The number and disposition of the burners upon the frame 8 will be in accordance with the arrangement and disposition of the sections 5 of the water containing portion of the apparatus.

This frame 8 has a portion 11 thereof, which extends upon the outside of the furnace. This outwardly extending portion serves as a means from which may be supported a transversely extending gas header 12. This gas header carries pipes 13, provided with valves 14 and the pipes 13 are adapted to extend into mixers 15 which are carried upon the end of a plurality of outwardly extending pipes such as indicated at 16, there being a pipe 16 for each burner, and, of course, a corresponding mixer and adjacent and coöperating pipes which lead to the gas header 12. The gas header is connected to a gas feed pipe 17 by means of some suitable coupling such as indicated at 18 which permits of the ready disconnection of the gas header from the gas feed pipe.

The forward portion of the frame 8 has secured thereto a plate 20, which plate when the frame is in the position shown in Figs. 2 and 3, lies against the front end of the base 1 and closes the opening 2.

When the apparatus is using gas as the fuel to provide heat, the frame with the burners thereon, occupies the position shown in full lines in Figs. 2 and 3. When it is desired to use the grates 6, the gas header 12 is disconnected from the gas feed pipe 17 and the frame 8 and the parts associated therewith are pulled forward and out of the

base. The opening 2 is then closed by any suitable door or plate.

It will be thus seen that the frame and burners being removed as a unit, may be replaced as a unit when it is again desired to use gas as a fuel. It will be seen that the frame functions very much like a drawer.

The construction thus provided forms a means for converting a gas heated water heating apparatus to a fuel heated apparatus or vice versa in a very simple and easy manner.

Having thus described my invention, what I claim is:

1. A water heating apparatus comprising a base portion and a water containing portion supported on the base portion, grate bars at the lower portion of the base, and means for supporting gas burners within the base above the grate bars, the supporting means and burners being removable as a unit from the said base portion.

2. In a water heating apparatus, the combination of a base portion and a water heating portion supported upon the base portion, grate bars within the said base portion adjacent the lower part thereof, a frame mounted in the base portion above the grate bars, and burners carried by said frame, the said frame and burners being removable as a unit from the said base portion.

3. A water heating apparatus comprising a base portion and a water containing portion supported by the base portion, grate bars supported within the base adjacent the lower part thereof, a plurality of burners above the grate bars, means for supporting the said burners, said means being slidably mounted within the base portion whereby the burners and their supporting means may be withdrawn as a unit from the base portion.

4. A water heating apparatus comprising a base portion and a water heating portion supported upon the base portion, grate bars within the base portion at the lower part thereof, a frame within the base portion above the grate bars, supports for the frame along which the frame may slide, gas burners carried by the said frame, the said base portion being provided with an opening at one end through which the said frame and burners as a unit may be removed from the base portion.

5. A water heating apparatus comprising a base portion and a water containing portion supported by the base portion, grate bars at the lower part of said base portion, a frame extending within the base portion above the grate bars, means for supporting the said frame within the base portion, burners carried by the frame, said frame having a part which extends without the base portion, a gas header carried by that part of the frame without the base portion, pipes connecting with said header and with the individual burners, the said base portion being provided with an opening through which the said frame and parts carried thereby may be removed as a unit from the base portion.

In testimony whereof, I hereunto affix my signature.

JOSEPH H. BACON.