June 2, 1925.

1,540,360

P. J. MOONEY

WATER HEATER

Filed May 18, 1922

Fig. 1.

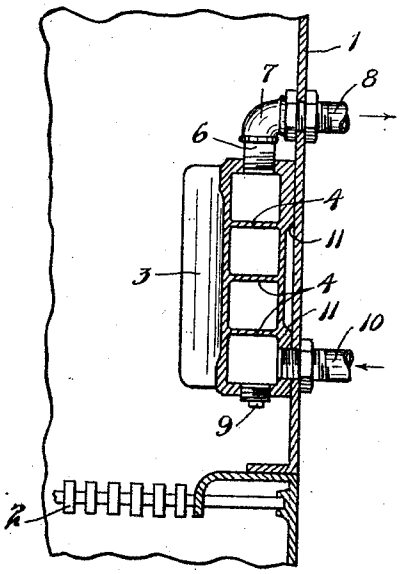


Fig. 2.

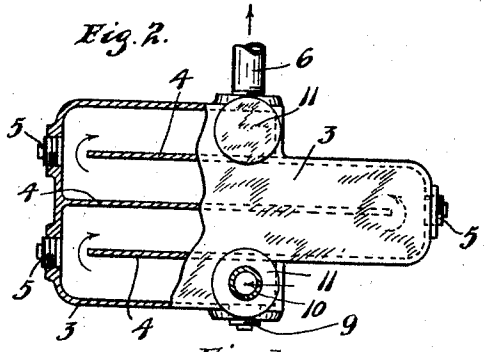
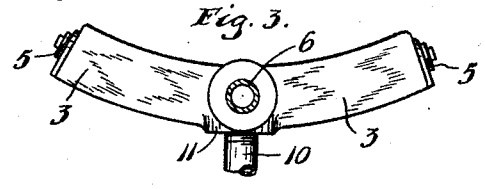


Fig. 3.



INVENTOR.
PHILLIP J. MOONEY.
BY HIS ATTORNEY.
James F. Williamson

Patented June 2, 1925. 1,540,360

UNITED STATES PATENT OFFICE.

PHILIP J. MOONEY, OF MINNEAPOLIS, MINNESOTA.

WATER HEATER.

Application filed May 18, 1922. Serial No. 562,008.

To all whom it may concern:

Be it known that I, PHILIP J. MOONEY, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Water Heaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a hot water heater and particularly to such a heater of the type usually located in the inside of a furnace to supply hot water for household use. Such heaters are now installed in practically every residence heating plant and in many furnaces for buildings where hot water is supplied to barber shops and other similar commercial institutions.

It is an object of this invention to provide a simple and inexpensive heater, preferably in the form of a casting which can be easily and quickly installed in a furnace with a minimum of labor and connections.

It is a further object of the invention to provide such a device so constructed that it can be easily cleaned and one which will have a minimum tendency to collect dirt or sediment.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawings in which like reference characters refer to the same parts throughout the different views, and in which,

Fig. 1 is a view in vertical section of the heater showing a part of the furnace to which the same is connected;

Fig. 2 is a view in front elevation of the device partly in section;

Fig. 3 is a top plan view of the device shown in Figure 1.

Referring to the drawings, the wall of a furnace of either the hot water, hot air, or similar type is shown as 1, the grate of which is indicated as 2. The heater comprises a member 3 preferably of cast metal which is curved in plan, as shown in Fig. 3, to correspond with the curvature of the furnace wall. The member 3 is of substantially uniform width and the length thereof is comparatively great, relatively to the width. The elongated hollow member thus formed is provided with a plurality of substantially horizontal and parallel partitions 4. These partitions project from the wall at one of their ends and have a free end spaced from the opposite wall, the same extending entirely across the width of the member 3. The partitions are alternately oppositely arranged, thus forming a continuous passage about the same from the bottom to the top of the member 3. The member 3 is provided with bosses having threaded openings therein disposed in the ends thereof directly opposite the free ends of the partitions 4 and removable plugs 5 are screwed into these openings to close the same. The member 3 is also provided substantially centrally of its length on its top and bottom surface with bosses having threaded openings therein, one of which, at the top is shown as having a connection 6 screwed thereinto. As shown in Fig. 1, this connection is attached by means of an elbow 7 to a pipe 8 secured in and leading through the furnace wall 1. The boss on the bottom of member 3 is provided with a threaded opening and is shown as receiving a closed removable plug 9. The member 3 is also provided at its convex or outer side with bosses 11, the lower one of which is shown as provided with a threaded opening into which is screwed the connection or pipe 10, as shown in Fig. 3, the other of said bosses being intact.

In use, the member 3 is disposed against the inside of the furnace wall as shown in Fig. 1 and the water to be heated enters therein through the pipe 10, the same passing through the passage in said member and out through the pipe 8. The heater can be easily cleaned when desired by removing the plugs 5 and 9 and these plugs may, if desired be made of fusible metal to prevent overheating of the member. The disposition of the bosses in the connecting pipes makes it a simple and easy task to connect the same to the member 3. The bosses 11 serve both as seating members to contact the wall of the furnace and also as attaching means. It will be obvious that the upper bosses 11 may be tapped and the upper connection made thereto and also that the lower connection will, if found more desirable or convenient, be made through the bosses containing the plug 9.

From the above description it is seen that applicant has provided a simple and efficient water heater for a furnace and one that can be easily and inexpensively made.

The provision for the inlet and outlet pipes is very convenient and facilitates the installation of the heater. The cleaning plugs are efficiently disposed for thorough cleaning of the device, when such cleaning is necessary. The heaters have been found to be very efficient in actual use.

It will, of course, be understood that various changes may be made in the form, details and proportions of the device without departing from the scope of applicant's invention, which, generally stated, consists in the matter shown and described and set forth in the appended claims.

What is claimed is:

1. A hot water heater adapted to be placed inside of a furnace comprising a hollow member of narrow width, relatively to its height, curved to fit the furnace wall and having flat top and bottom surfaces, bosses on the top and bottom sides thereof adjacent the ends of said sides having threaded apertures therethrough, bosses on the convex side of said member adjacent its top and bottom, whereby inlet and outlet pipes may be disposed either at said convex or at the top and bottom sides of said member adjacent its top and bottom, respectively, a plurality of partitions in said member having free ends and extending substantially horizontally and having a zig zag passage between the bosses at the top and bottom of said member, said member having threaded cleanout openings adjacent the free ends of said partitions, normally closing said threaded opening, and plugs closing the unused threaded openings in said threaded bosses.

2. A hot water heater adapted to be placed inside of a furnace comprising a curved hollow member having a projection extending horizontally from one end thereof substantially centrally vertically of said member, a horizontal partition extending from the end of said member opposite said projection extending into said projection and spaced from the end wall thereof, a horizontal partition extending from the top and bottom walls of said projection into said member and spaced from the end thereof, bosses on the convex side of said member at the end thereof adjacent said projection and adjacent the top and bottom surfaces of said member, bosses on top and bottom surfaces of said members transversely alined with said first mentioned bosses, an inlet pipe connected to the lower boss on the side of said member, an outlet pipe connected to the boss on the top surface of said member, and a cleanout plug closing an opening through the boss in the bottom surface of said member.

In testimony whereof I affix my signature.

PHILIP J. MOONEY.