(No Model.)

E. MEDDEN & J. URQUHART, Sr.

HOT WATER HEATER.

No. 401,362. Patented Apr. 16, 1889.

Fig. 1.

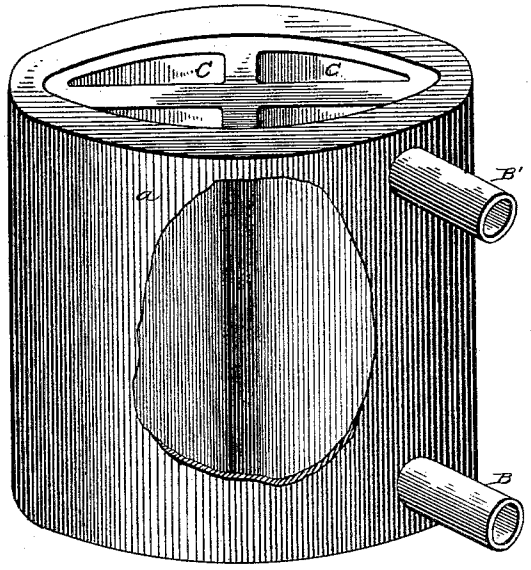


Fig. 2.

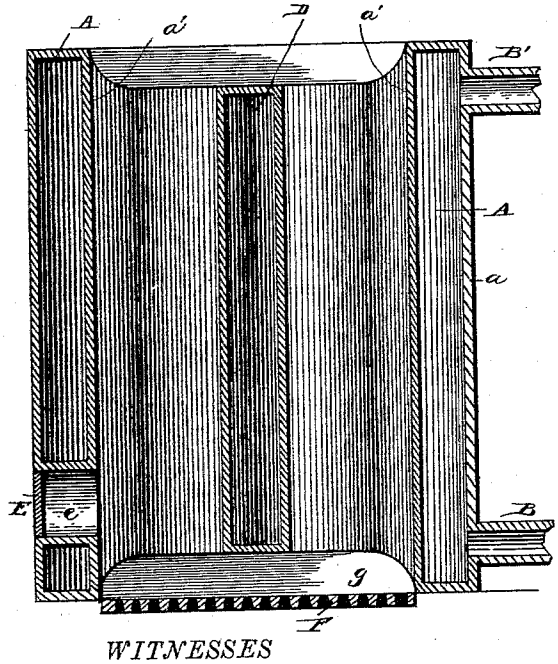
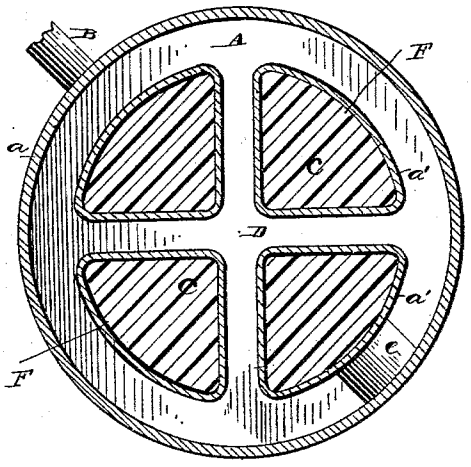


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

EDWIN MEDDEN AND JOHN URQUHART, SR., OF SENECA FALLS, NEW YORK, ASSIGNORS OF ONE-HALF TO FRANK WALTER AND CHARLES E. WESSELL, BOTH OF SAME PLACE.

HOT-WATER HEATER.

SPECIFICATION forming part of Letters Patent No. 401,362, dated April 16, 1889.

Application filed April 5, 1888. Serial No. 269,743. (No model.)

To all whom it may concern:

Be it known that we, EDWIN MEDDEN and JOHN URQUHART, Sr., citizens of the United States, residing at Seneca Falls, in the county of Seneca and State of New York, have invented certain new and useful Improvements in Hot-Water Heaters; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of water-heaters which are designed for heating and drying purposes; and its object is to provide a simple and improved device of this character which will effectively operate to heat a large quantity of water with a small apparatus of such a character that a large amount of heating-surface is exposed to the action of the fire.

A further object of our invention is to provide a heater possessing advantages in point of inexpensiveness, durability, and general efficiency.

In the drawings, Figure 1 is a perspective view of a hot-water heater embodying our invention, parts being broken away to show the interior construction. Fig. 2 is a vertical longitudinal sectional view thereof. Fig. 3 is a transverse sectional view.

Corresponding parts in the figures are denoted by the same letters of reference.

Referring to the drawings, A designates a water-chamber formed by a cylindrical shell or boiler comprising an interior and exterior shell, *a a'*, respectively, and provided with an inlet-pipe, B, near the bottom thereof, and an outlet-pipe, B', near the top.

The space within the interior shell forms the fire-box, and is divided into compartments C, forming fire-chambers, by diametrical vertical water ways or compartments D, preferably narrow and four in number, connected with the chamber A at their outer ends and united at their inner ends, as shown at D, thus providing the four fire-chambers shown. A door, E, at the outer end of a passage-way, *e*, extending through the shell or boiler A, may be provided. The bottoms of the diametrical water ways or compartments do not extend to the bottom of the heater, as shown at *g*, so that a space is formed at the bottom of the fire-chambers C, under which is provided a grate, F. The object of this space *g* is to provide for the swinging and operation of the grate.

The operation and advantages of our invention will be readily understood by those skilled in the art to which it appertains. It will be observed that by locating the fire-chambers as above described the water chambers or compartments are brought in direct contact with the fire, and also that, while the device will occupy but little space, by the construction described a great amount of heating-surface is obtained.

We are aware that steam-boilers have been heretofore constructed embodying an exterior water-compartment and interior diametric compartments connected therewith; but such construction we do not broadly claim, our invention consisting in the improved construction, as herein claimed and described.

We claim as our invention—

In a hot-water heater, the combination, with an exterior continuous water-compartment provided with inlet and outlet pipes, of interior diametrical water-compartments connected therewith and provided with concave or contracted lower ends, for the purpose described, said exterior and interior compartments forming complete fire-chambers, as and for the purpose set forth, and a grate disposed under the heater, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

EDWIN MEDDEN.
JOHN URQUHART, SR.

Witnesses:
ARTHUR L. CROSBY,
FRANK WALTER.