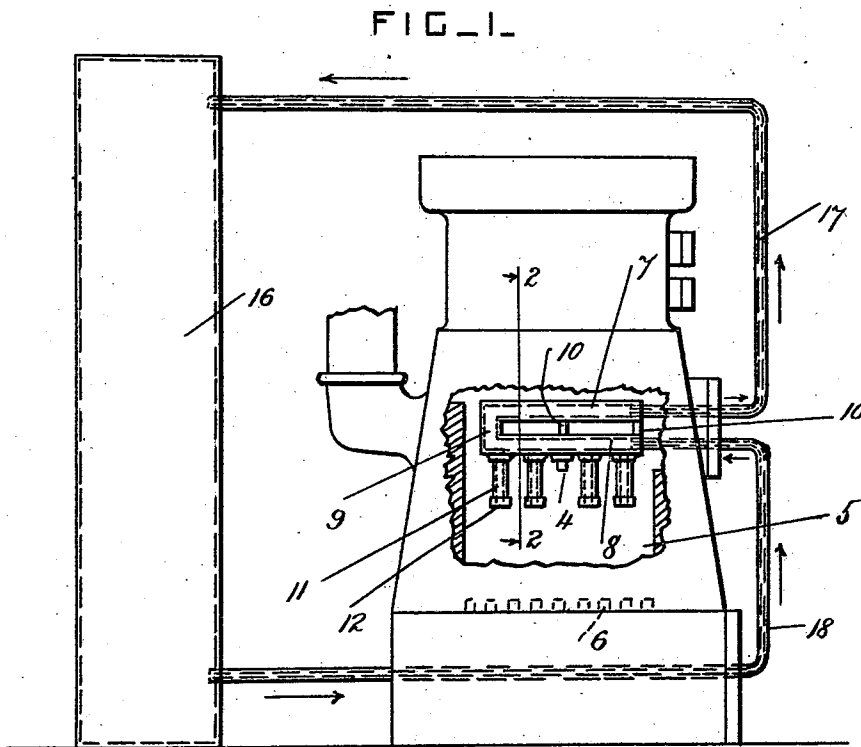
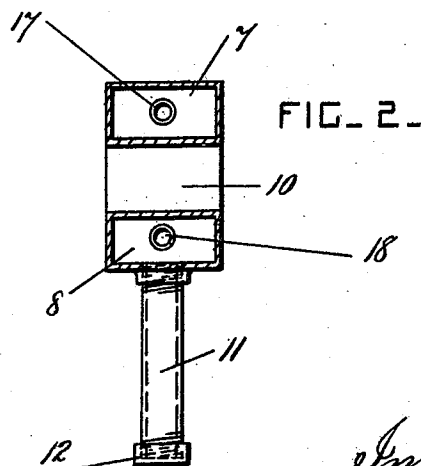


W. J. EDWARDS.
WATER HEATER.
APPLICATION FILED MAR. 22, 1921.

1,415,432.

Patented May 9, 1922.



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UNITED STATES PATENT OFFICE.

WILLIAM J. EDWARDS, OF GENEVA, OHIO.

WATER HEATER.

1,415,432.

Specification of Letters Patent.

Patented May 9, 1922.

Application filed March 22, 1921. Serial No. 454,449.

To all whom it may concern:

Be it known that I, WILLIAM J. EDWARDS, a citizen of the United States, residing at Geneva, in the county of Ashtabula and State of Ohio, have invented certain new and useful Improvements in Water Heaters, of which the following is a specification.

This invention relates to water heaters adapted for use in connection with the furnaces ordinarily provided in dwelling houses; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a side view of a heater constructed according to this invention showing also portions of a furnace in section, and a tank for the hot water. Fig. 2 is a cross-section through the heater, taken on the line 2—2 in Fig. 1.

The furnace is of any approved construction such as ordinarily used in dwelling houses, and having a fire-box 5 provided with a grate 6. The heater is provided with an open rectangular frame preferably formed of cast metal and comprising an upper member 7, a lower member 8 arranged substantially parallel to the upper member, and an end member 9 which connects the horizontal members together at one end. These members are all tubular, and distance pieces 10 are provided between the members 7 and 8 to preserve the rectangular shape of the frame.

The lower tubular member 8 has vertical tubes 11 secured to it and arranged at suitable

distances apart. The lower ends of these tubes are closed by caps 12, and when only a few tubes are necessary the openings for the tubes which are not used are closed by plugs 4. These tubes 11 are relatively long in proportion to their diameters. The frame with its depending tubes is supported in the fire box 5 of the furnace over the grate by any approved fastening devices, and the ends of the two horizontal members 7 and 8 are connected to the hot water tank 16 by pipes 17 and 18. The products of combustion pass freely around the tubular members and tubes and heat the water in them. The water circulates continuously in the direction of the arrows in Fig. 1, and a supply of hot water is constantly maintained in the tank.

What I claim is:

A water heating attachment adapted to be secured inside a furnace over the fire-pot thereof, said attachment comprising a hollow casting having upper and lower water chambers arranged horizontally and substantially parallel to each other and connected together at one end by a relatively short vertical chamber, vertical heating tubes having closed lower ends and having their upper ends connected to the lower water chamber, and water pipes connected to the opposite ends of the upper and lower water chambers from their vertical connecting chamber.

In testimony whereof I have affixed my signature.

WILLIAM J. EDWARDS.