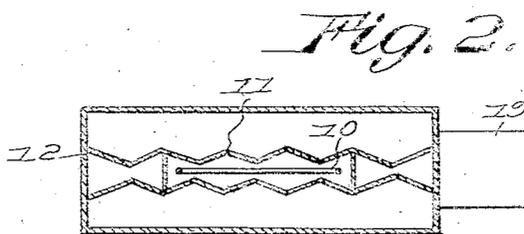
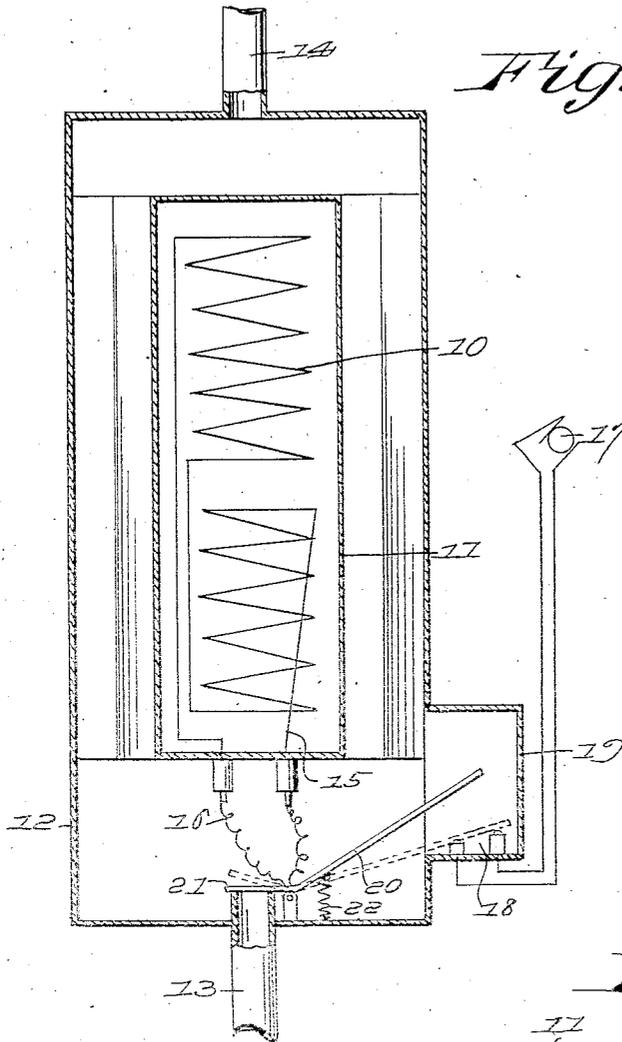


Jan. 2, 1923.

1,440,693.

H. R. MONTGOMERY.
ELECTRICAL WATER HEATER.
FILED JAN. 7, 1921.



Inventor
H. R. Montgomery,
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UNITED STATES PATENT OFFICE.

HUBERT R. MONTGOMERY, OF DAYTON, OHIO.

ELECTRICAL WATER HEATER.

Application filed January 7, 1921. Serial No. 435,626.

To all whom it may concern:

Be it known that I, HUBERT R. MONTGOMERY, a citizen of the United States of America, residing at Dayton, in the county of Montgomery and State of Ohio, have invented new and useful Improvements in Electrical Water Heaters, of which the following is a specification.

The object of the invention is to provide a simple and efficient water heater for domestic use or where the requirement for hot water is intermittent, and it is desirable to provide for heating the same only as it may be needed to supply the occasional demand; and furthermore to provide a means for this purpose wherein an electrical heating unit may be employed to the end that the house service lighting system may be employed as the source of electrical energy; and with these objects in view the invention consists in a construction and combination of parts of which a preferred embodiment is shown in the accompanying drawings, wherein:—

Figure 1 is a vertical sectional view of a heating apparatus embodying the invention.

Figure 2 is a transverse sectional view of the same.

The resistance coils or units 10, of which any desired number may be employed according to the desired capacity of the heater, and which are designed to be wired in series as indicated, are arranged in a casing 11 of sheet metal such as copper, brass, or the like of relatively high heating conductivity, of which the walls are preferably corrugated as indicated to increase the surface for contact with the liquid contents of the water chamber defined by the boiler or receptacle 12 in communication with which are arranged the cold water inlet pipe 13 and the hot water outlet pipe 14. The circuit wires 15 are conveyed through suitable protective conduits or tubes 16 to the exterior of the boiler for connection with any suitable source of supply indicated at 17 and include a switch 18 arranged in a suitable switch

box 19 under the control of a switch lever 20 which is operatively connected with the cold water inlet valve 21 yieldingly held in its closed position by a spring 22 or its equivalent and exposed to inlet water pressure which is sufficient to unseat the same when the vent such as a faucet or the like of the hot water outlet pipe is opened. Said switch is closed to complete the circuit through the coils or other heating units, therefore, when pressure is relieved in the outlet water pipe, due to the excess of pressure in the cold water inlet pipe upon the inlet valve serving to move the latter to the dotted line position indicated in Figure 1, so that the water in passing through the boiler is exposed to the influence of the heating units, whereas upon the closing of the hot water outlet pipe the equalization of the pressure at opposite sides of the plane of the inlet valve permits of the return of the latter to its seated position under the influence of the spring 22 and the opening of the switch to cut off the supply of electricity to the coils.

The invention having been described what is claimed as new and useful is:—

A water heater having a boiler communicating with supply and outlet pipes, a heating unit enclosed within said boiler and provided with a heat conducting casing, the boiler being provided with a switch box having circuit closing contacts therein, the heating unit being electrically connected with said contacts and the latter with a source of electrical supply, a valve closing the supply pipe and yieldingly held in a position of closure, and a switch engageable with said contact and operatively connected with the valve whereby the contacts are closed when the valve is open, whereby the heating element may be first inserted at the time of admission to the boiler of water from the supply pipe.

In testimony whereof he affixes his signature.

HUBERT R. MONTGOMERY.