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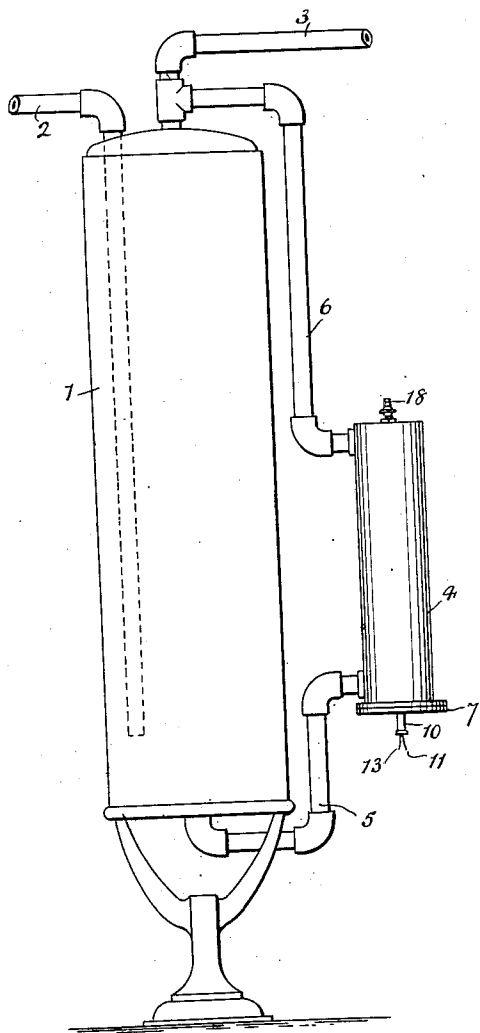
L. L. BLUEMLEIN

WATER HEATER

Filed May 13, 1924

1,534,898

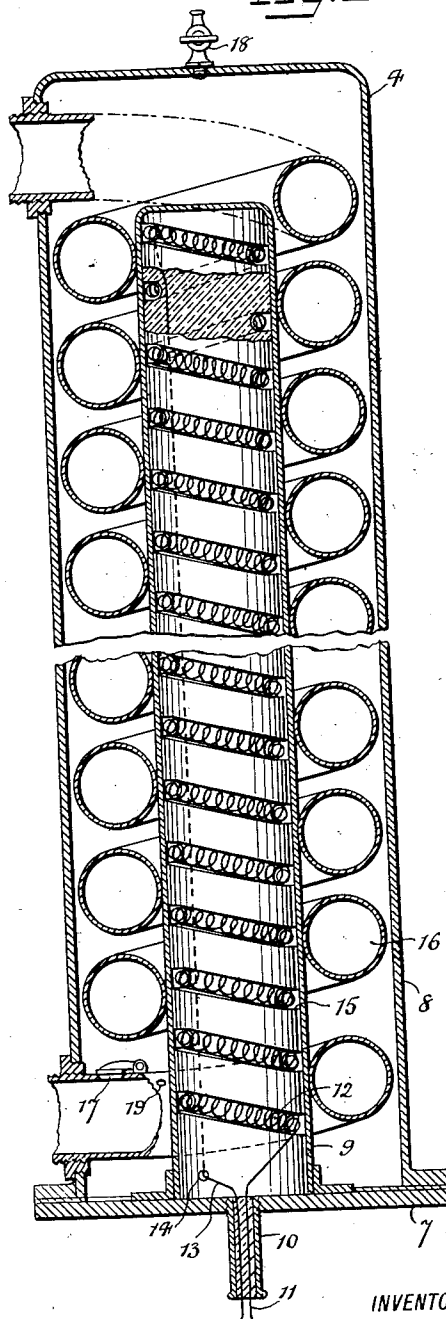
Fig. 1.



WITNESSES

H. T. Walker
A. L. Kitchen

Fig. 2.



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LUDWIG L. BLUEMLEIN, OF HARTSDALE, NEW YORK.

WATER HEATER.

Application filed May 13, 1924. Serial No. 713,010.

To all whom it may concern:

Be it known that I, LUDWIG L. BLUEMLEIN, a citizen of the United States, and a resident of Hartsdale, in the county of Westchester and State of New York, have invented a new and Improved Water Heater, of which the following is a full, clear, and exact description.

This invention relates to water heaters and has for an object to provide an improved construction wherein an electric heater is utilized as the heating means with the other parts so arranged that there is very little heat wasted.

Another object of the invention is to provide a water heater wherein an electric heating element is arranged interiorly of the tank of the heater so that the heating element is substantially surrounded by water and, consequently, practically all of the heat units utilized in the desired way.

A further object of the invention is to provide an electric water heater wherein the water is heated in a coil which in turn is heated from a surrounding body of water maintained hot through the action of the electric heater acting more or less directly thereon.

In the accompanying drawing—

Figure 1 is a side view of a heater embodying the invention, the same being shown connected with a storage tank and suitable supply and discharge pipes.

Figure 2 is a longitudinal vertical sectional view through the heater shown in Figure 1.

Referring to the accompanying drawing by numerals, 1 indicates an ordinary domestic boiler used as a storage tank into which water is supplied through pipe 2 and from which water is withdrawn through pipe 3. The heater 4 is arranged as shown in Figure 1 and has the lower part connected to the bottom of the boiler 1 by a suitable pipe 5 and the upper part connected to pipe 3 by a pipe 6 whereby when there is no water being drawn out through pipe 3, the water heated by the heater 4 will pass upwardly through pipe 6 into the upper part of the boiler 1 and the colder water at the bottom will pass into the heater 4. This circulation of water will continue as long as the heater 4 is at a higher temperature than the water in the boiler 1. It is, of course, understood that

when all or most of the water in the boiler 1 becomes hot, the electricity is turned off from the heater 4.

The heater 4 is shown in detail in Figure 2 wherein it will be seen that this heater is provided with a base 7 to which a container 8 is secured in any desired manner. A tube 9 is connected to base 7 in any desired manner, said tube being closed at the upper end and open at the bottom. An electric plug or wire guide 10 is screwed into the base 7 so that the lead-in-wire 11 may extend into and be connected with the heating coil 12 while the lead-out-wire 13 may extend from the upper end of coil 12 downwardly through the asbestos core 14 and finally out through member 10 to a source of supply. The core 14 is preferably of asbestos though it might be made from fire-clay or other fire-proof material which is a non-conductor. In forming the core 14, the same preferably fits the tube 9 snugly and is provided with a spiral groove 15 which receives the heating coil 12 but spaces the same from the tube 9 which is copper, brass or other metal. It will be understood that the lower end of the tube 9 is connected to base 7 in such a manner as to prevent any water from passing into the interior of the tube from the interior of the container 8. Surrounding the tube 9 is a comparatively large coiled pipe 16, which at the lower end is connected to pipe 5 and the upper end is connected to pipe 6. The diameter of the coiled pipe 16 is such that it will reach from the pipe 9 to near the container 8 while the coils are preferably spaced apart a short distance in order that the water in the container 8 may freely circulate around the various coils of pipe 16. A flap valve 17 of any desired structure is provided in the pipe 16 near where it is connected with pipe 5 so that whenever there is any loss of water in the container 8, the same may be supplied automatically.

When the container 8 is first filled with water, the valve or pet cock 18 is opened and left open until the entering water has forced all the air from the container after which the valve is closed and the container is completely filled with water. In case there should be an undesirable expansion of water or the production of steam at too high a pressure, the valve 18 could be opened at any time to relieve this pressure. Also if de-

sired, a small vent hole 19 could be made in the pipe 16 near valve 17 whereby the water in the container 8 could back into the pipe 16.

When the parts are all in position as shown in Figures 1 and 2 and a supply of hot water is desired, current is turned on from any suitable source and immediately the coils 12 will become heated. As this heat can escape only outwardly, it will pass principally into the water in the container 8 and from thence into the water in pipe 16, which water will circulate as heretofore described in order to provide a supply of water in the boiler 1. After the desired supply of hot water has been secured, the current is turned off but the water in the container 8 will be very hot and so will the heating element which consists of the core 14 and the coils 12. By reason of this fact, the water in the boiler 1 will be maintained hot and in case an appreciable amount is drawn off, a limited new supply of heated or warm water will be supplied by reason of the high temperature by the heating element from the water in the container 8.

What I claim is:

A water heater, comprising a container adapted to be filled with water, a heating coil arranged in the container, an inlet pipe extending from the lower end of said heating coil to a point exteriorly of the container, an outlet pipe extending from the upper end of said coil to a point exteriorly of the container, and heating means arranged within said coil, said heating means enclosing a tubular member closed at the upper end and rigidly secured at the lower end to the bottom of the container, the same being secured in such a manner as to be water-tight, a core snugly fitting in said tubular member and extending from top to bottom, said core having a spiral groove, a heating coil arranged in said groove, substantially air-tight means for guiding lead-in-wires to said coil, said core being provided with a longitudinal aperture for permitting one wire to extend to the top of the coil while the other extends to the bottom of the coil.

LUDWIG L. BLUEMLEIN.