March 10, 1936. J. MOSES 2,033,443

ELECTRIC WATER HEATER

Filed Dec. 26, 1934

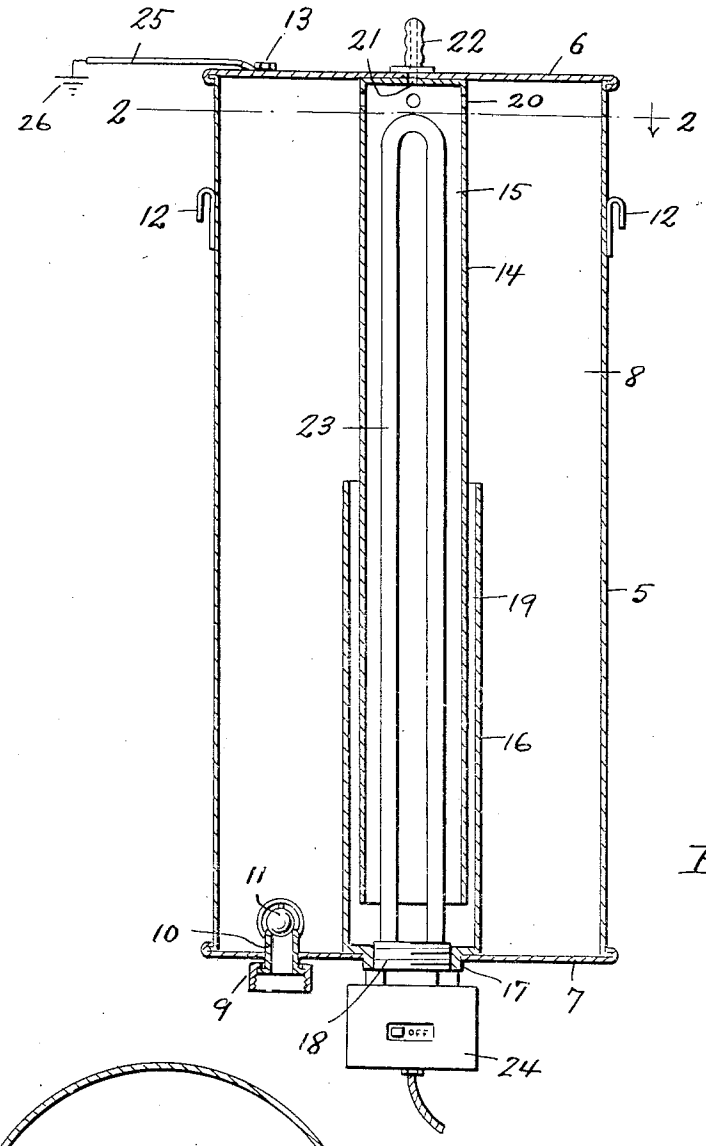


Fig. 1.

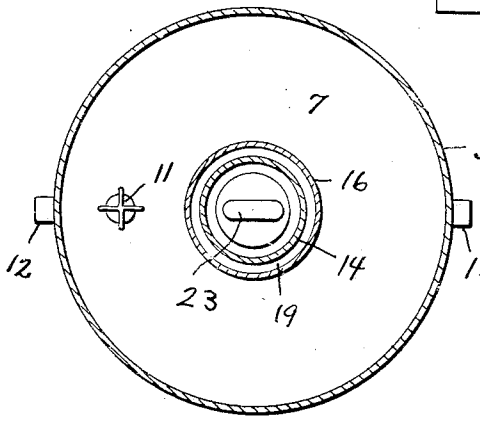


Fig. 2.

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ELECTRIC WATER HEATER

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1 Claim. (Cl. 219—39)

This invention relates to electric water heaters wherein the electric heating element is of the immersion type.

One of the objects of the invention is to provide a heater that may be conveniently hung in the basement of a building or any place where a permanent heater for larger amounts of water would be too costly to install and operate.

Another object of the invention is to provide a heater that is particularly adapted for shower baths because it will not circulate more than half of the water and the temperature of the water will be governed by the flow.

Another feature of the invention is to make a simple, economical electric water heater which is comparatively cheap in first cost of installation and also for economic operation of the shower bath.

A still further object of the invention is the construction of an immersion heater whereby the water travels directly by the immersion heating element to the outlet thereby using the natural force of the hot water, current going upwards.

With the foregoing and other objects in view the invention consists of a novel construction, combination and arrangement of parts as will be hereinafter more specifically described and illustrated in the accompanying specification and drawing, wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations, and modifications may be resorted to, without departing from the spirit of the claims hereunto appended.

In the drawing wherein like reference characters denote corresponding parts throughout the several views:

Figure 1 is a detailed vertical section through the electric immersion water heater constructed in accordance with the present invention.

Figure 2 is a horizontal section taken substantially on line 2—2 of Figure 1.

Referring to the drawing in detail, 5 indicates a cylindrical casing having a closed top wall 6 and a closed bottom wall 7 thereby providing the lateral, large water chamber 8. Mounted in the bottom wall 7 is a female hose connection 9 whereby water may be supplied to the chamber 8 through a hose (not shown). The inlet nipple is indicated at 10 and is mounted in the bottom wall 7 on the outer end of which is the female hose connection 9. The upper end of the nipple 10 has an upwardly opening check valve 11 so that water will not escape from the chamber 8 when the hose is disconnected. On the side of the tank 5 are a pair of hooks 12 by which the tank is supported on suitable brackets. A clean-out plug 13 is mounted in the top wall.

The inner sleeve 14 is secured to the top wall 6 thereby providing an inner water compartment 15. The lower end of the inner sleeve 14 terminates slightly above the bottom wall 7. The bottom of the outer sleeve 16 is secured to the bottom wall 7 by the flange 17 and in the center of the flange is a threaded opening in which is mounted the ring collar 18 which carries the immersion heating element to be presently described. The outer sleeve 16 overlaps about one half of the lower end of the inner sleeve 14. The space 19 between the inner and outer sleeve furnishes a second water compartment. The outer sleeve 16 lies substantially on the same axis as the inner sleeve 14. Adjacent the top wall of the casing 6, the inner sleeve 14 is provided with a series of ports 20 and these ports are above the upper end of the outer sleeve 16.

Through the top wall 6 and the bottom wall of the sleeve 14 is an opening 21 in which is mounted an upstanding nozzle 22 which may be connected with a shower bath hose. Mounted in the collar 18 are the ends of an elongated U-shaped immersion electric heating element 23, the upper end of which terminates slightly below the ports 20 and this heating element is substantially co-extensive with the inner and outer water compartments 15 and 19 respectively. Connected with the heating element 23 is the time switch 24 that controls the flow of electricity to the heating element so that it will be impossible to boil the water away and thus ruin the heating element.

The path of flow in this water heater is from the outer chamber 8 down the outer water compartment 19 then up through the inner water compartment 15 passing directly by and around the immersion heating element 23 and then out through the nozzle 22. This path is the natural path for the water and promotes maximum efficiency. The ports 20 in the top of the inner sleeve 14 allows circulation down to the level of the outer tube which will accommodate the difference in the time required by one person to another in getting ready to use the shower bath without wasting or overheating or boiling away the water, and the water will be tempered.

Some ordinances may require grounding my water heater, and in the furtherance of safety I provide a suitable ground indicated at 26 and run an electric conductor 25 from the ground to the casing and for convenience of illustration

I show the conductor attached to the clean out plug 13.

Having described my invention, what I claim as new is:

An electric water heater comprising a casing formed with a water chamber, a sleeve having apertures at the top thereof and secured to the top wall of the casing and terminating short of the bottom wall thereby providing a separate water compartment, an electric immersion heating element in the separate compartment substantially co-extensive with the length thereof, a second sleeve greater in diameter than the first mentioned sleeve secured to the bottom wall and surrounding the first mentioned sleeve to substantially its mid point thereof, thereby providing a separate water compartment around the first mentioned separate compartment, said casing having an inlet in the water compartment and an outlet in the top of the first mentioned compartment.

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