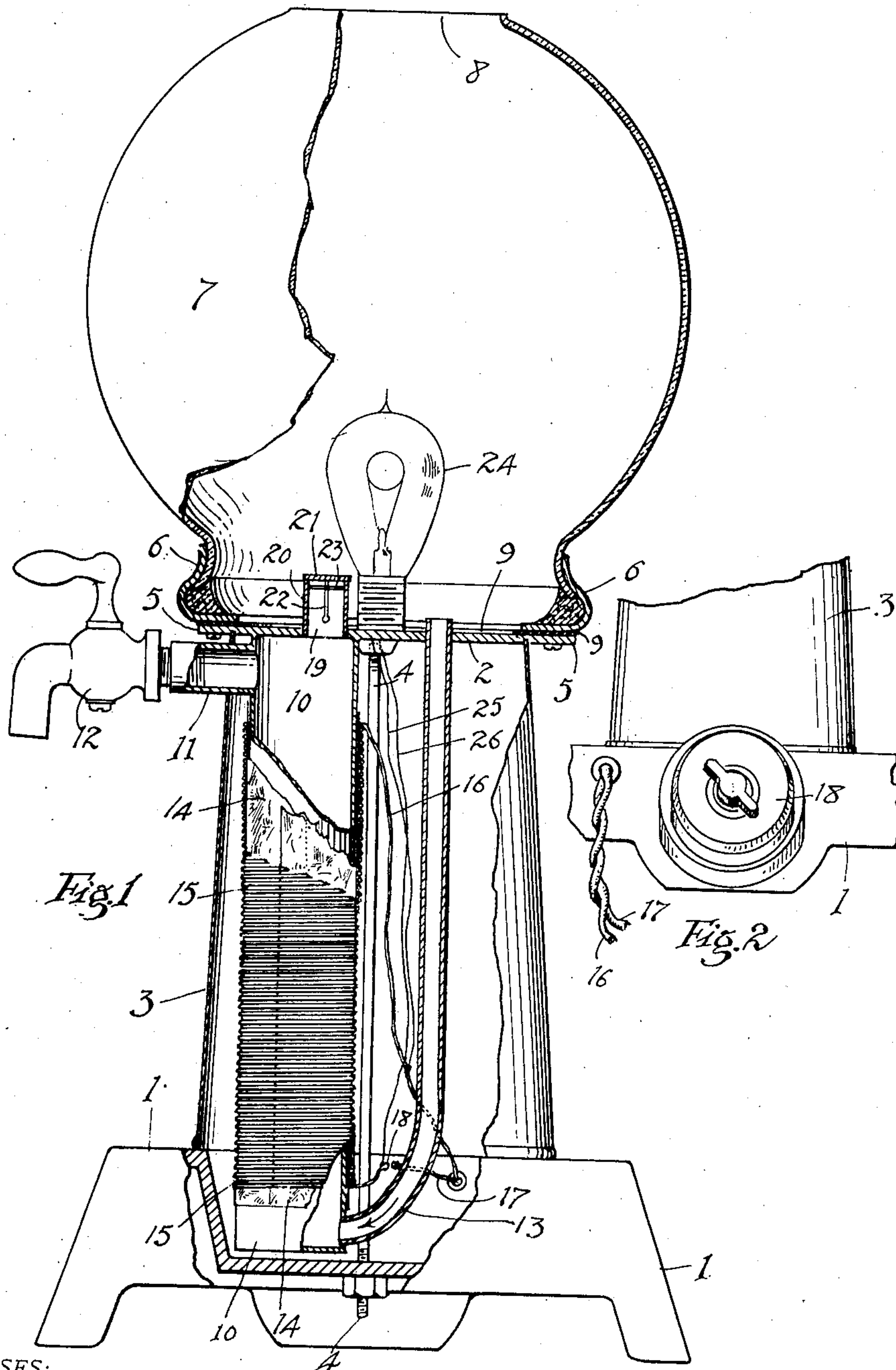


No. 888,151.

PATENTED MAY 19, 1908.

O. H. FIDDES & H. A. SEIFKE.  
ELECTRIC WATER HEATER.

APPLICATION FILED DEC. 18, 1907.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

OSCAR H. FIDDES AND HERMAN A. SEIFKE, OF SAN FRANCISCO, CALIFORNIA.

## ELECTRIC WATER-HEATER.

No. 888,151.

Specification of Letters Patent.

Patented May 19, 1908.

Application filed December 18, 1907. Serial No. 406,990.

*To all whom it may concern:*

Be it known that we, OSCAR H. FIDDES and HERMAN A. SEIFKE, citizens of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Electric Water-Heaters, of which the following is a specification.

The object of the present invention is to provide an electric water heater by which water can be very rapidly heated, and which will be simple in construction, convenient in operation, and not liable to get out of order.

A further object is to provide means for apprising the user when the electric current is passing through the heater.

In the accompanying drawing, Figure 1 is a side view of the device broken away to show the interior; Fig. 2 is a broken view of the other side.

Referring to the drawing, 1 indicates a stand or base, upon which the apparatus is mounted. Between said base and a top 2 a casing 3 is secured by a tie rod 4. Screwed to lugs 5 on said top 2 is a ring 6 of metal to which is cemented a bowl or vessel 7 preferably of glass, and having an opening 8 at the top for supplying the vessel with water. A packing ring 9 is interposed between the metal ring 6 and the top 2. Secured to the under side of said top 2 is a depending heating tube 10 closed at the bottom, from which extends a spout 11 controlled by a stop-cock 12. Leading to a part of said tube 10 near the bottom is a tube 13, which is connected with the top 2 through a hole therein, thereby forming a water conduit from the bowl to the tube 10. Around said tube 10 is wrapped mica insulation 14 and around the mica is wound a coil of high-resistance wire 15, the turns of the coil being spaced from each other, so that the electric current is compelled to pass through the whole length of the coil. The ends of the coil are connected by wires 16, 17, with the poles of an ordinary electric switch 18 secured in the base 1. The heating tube 10 connects with the interior of the bowl 7 through a hole 19 in the top 2, there being mounted on the top 2 around or over said hole a tubular valve casing or seat 20, on the upper edge of which rests a flat circular check valve 21, having a stem 22, which is guided by a bridge 23 across the valve casing. Normally this valve is closed against the entrance of water into the tube 10 from the bowl. Screwed into said top 2 is a

small electric lamp 24, preferably colored, as of a red color, the terminals of said lamp being, by wires 25, 26, connected with the switch in multiple with the coil.

In operation, the user pours water into the bowl, and closes the circuit by means of the switch, when the water in the receptacle will be found to be sufficiently hot for ordinary purposes in about 15 seconds, and will be brought to a boiling point in about 40 seconds.

The check valve 21 forms the main feature of the present invention. If this check valve were not provided, so that both ends of the heating tube 9 were in free communication with the bowl, the water would be heated comparatively slowly due to the fact that the water would circulate freely in the circuit of the tube 19, the conduit 13 and the bowl, and therefore it would be necessary to heat the entire body of water uniformly. With the present construction, such is not the case. Only the water in the tube 10 is heated, so that hot water can be obtained very quickly. On the other hand a construction in which the heating tube 10 is closed at the top and communicates with the bowl only at the bottom, would be inoperative, or at least very inconvenient, because if steam were generated in the heating tube, it would rise and collect in the top of said tube. It would then frequently happen that upon opening the faucet, steam, instead of hot water, would flow therefrom. We avoid this objection by providing the check valve 21, which operates in the following manner. The height of the valve casing 20 above the top 2 is arranged to be such, that for a given weight of the check valve 21, before the steam collects therein as far down as the outlet for the water, the pressure of the confined body of steam, being the same both at the top and bottom, and being equal to that due to a column of water of the same depth, is sufficient to raise the check valve 21 from off its seat, so that steam can escape. The heat of the escaping steam is taken up by the water in the bowl and is not lost. But now it can never happen that, upon opening the faucet, steam can flow therefrom, so long as there is any water in the bowl. The faucet will however generally be opened before sufficient steam has been generated to fill the tube 10 as low as the spout 11.

When the electric switch is on, the electric lamp 24, illuminating the water in the bowl,



in a very striking manner directs the user's attention to the fact that the current is on, and by having the lamp of a red or other color, the device presents a pleasing appearance when in operation.

We claim:—

1. In an electric water heater, the combination of a water heating tube, a coil of resistance wire around the same, a vessel above the tube, and communicating with the bottom of said tube, a faucet leading from the top of said tube, and a check valve between the top of the tube and the vessel, substantially as described.

2. In an electric water heater, the combination of a water heating tube, a coil of re-

sistance wire around the same, a vessel above the tube, and communicating with the bottom of said tube, a faucet leading from the top of said tube, a check valve between the top of the tube and the vessel, and an electric lamp in the vessel, in multiple with the heating coil, substantially as described.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

OSCAR H. FIDDES.  
HERMAN A. SEIFKE.

Witnesses:

FRANCIS M. WRIGHT,  
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