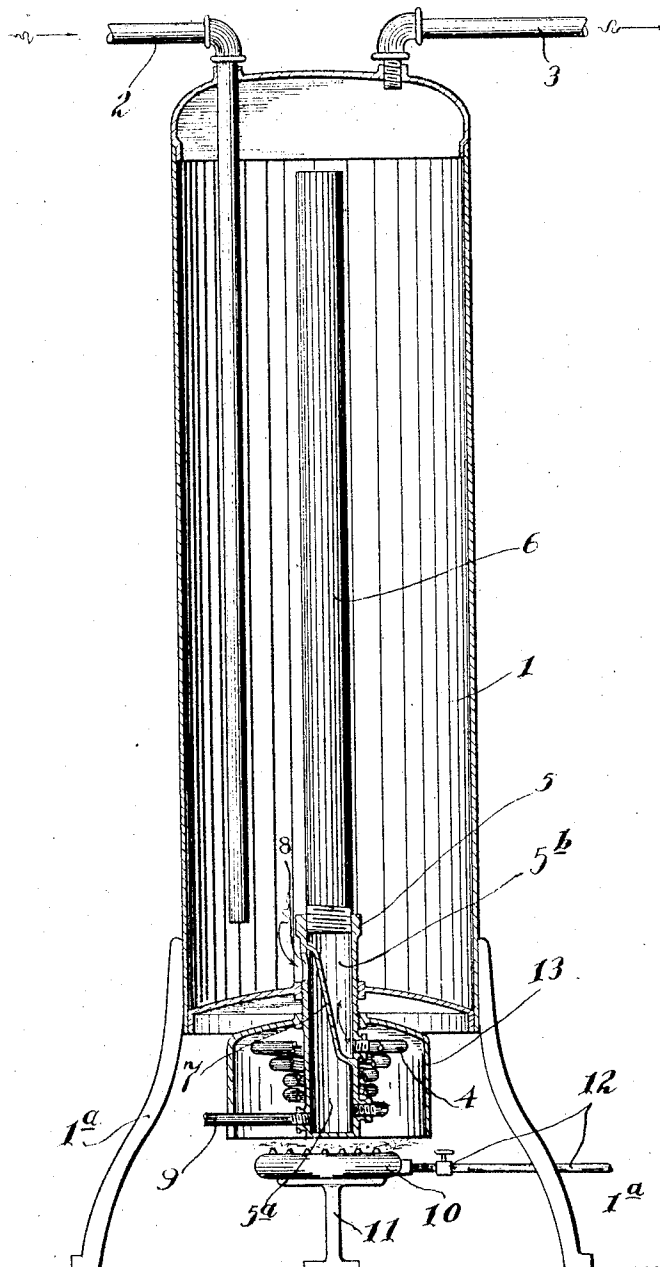


W. H. BRIGHT.
TANK HEATER.
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1,037,725.

Patented Sept. 3, 1912.



Witnesses:

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UNITED STATES PATENT OFFICE.

WARREN H. BRIGHT, OF MINNEAPOLIS, MINNESOTA

TANK-HEATER.

1,037,725.

Specification of Letters Patent.

Patented Sept. 3, 1912.

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To all whom it may concern:

Be it known that I, WARREN H. BRIGHT, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Tank-Heaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved tank heater especially adapted for use in connection with hot water tanks of the type used to supply hot water for kitchens, bath and similar purposes.

To such ends, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claim.

The invention is illustrated in the single view of accompanying drawing.

The hot water tank 1 is shown as supported by legs 1^a and is provided with a cold water supply pipe 2 and a hot water discharge pipe 3, said parts being of standard construction.

The so-called boiler may take various forms, but as preferred and as shown in the drawing, it is in the form of a copper coil 4 that surrounds the lower and outer end portions of the water conduit tube 5 that extends axially through the bottom of the tank 1 and is, of course, connected to the said tank bottom by a water tight joint. The lower end of the tube 5 is closed but the upper end thereof is connected to the lower end of the hot water delivery pipe 6 that extends nearly to the top of the tank. This water conduit tube 5 is divided into two compartments or channels 5^a and 5^b, by means of an oblique or diagonal partition 7. This partition 7 extends from a point considerably above and to a point considerably below the tank bottom. The channel 5^a is the cold water return channel, while the channel 5^b is the hot water delivery channel, and it is important to note that the oblique partition 7 makes both of these channels flare or increase in cross-section in the direction of

the flow of water therethrough. As shown, the oblique partition 7 both at its upper and lower extremities is rigidly secured to the walls of the tube 5. The upper extremity of the channel 5^a is in communication with the bottom of the tank by a port 8 formed in one wall of the tube 5. The boiler coil 4 at its lower extremity is tapped into or connected to the lower extremity of the cold water return channel 5^a, whereas, the upper extremity of the said coil is tapped into or connected to the lower portion of the hot water delivery channel 5^b.

The numeral 9 indicates a drain pipe which leads from the bottom of the channel 5^a, and, in practice, will be provided with a normally closed valve, not shown.

The numeral 10 indicates a gas burner located below the lower end of the tube 5 and, as shown, supported by a floor bracket 11. This burner 10 is shown as provided with a valved gas or oil supply pipe 12.

The numeral 13 indicates a housing or hood which is attached to the tube 5 and incloses the boiler coil 4 so that the heat from the burner 10 will be eventually applied to the said coil.

Obviously, the circulation of the water heated in the coil 4 will be upward through the conduits 5^b and 6 to the top of the tank, and from thence, to the bottom of the tank and downward through the conduit 5^a. By increasing the cross-section, and hence, the conducting capacity of the conduits 5^a and 5^b in the direction of the flow of the water therethrough, danger of blocking by the collection of sediment is avoided and better circulation of the water through the tank is maintained.

As shown, the cold water return and hot water delivery channels of the tube 5 are increased in cross-section and in conducting capacity in the direction of the flow of the water therethrough.

What I claim is:

The combination with a water tank, of a boiler located below the same, a tube extending from said boiler upward into the said tank and provided with an oblique longitudinal partition dividing the said tube into cold water return and hot water

delivery channels, both connecting the said boiler and the said tank for the circulation of the water of the tank therethrough, the said channels being increased in cross-section and conducting capacity in the direction of the flow of the water there-through.

In testimony whereof I affix my signature in presence of two witnesses.

WARREN H. BRIGHT.

Witnesses:

HARRY D. KILGORE,
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