June 6, 1933. E. W. BALLENTINE 1,913,099

HEATER FOR WASHING MACHINES

Filed July 25. 1931

Fig. 1.

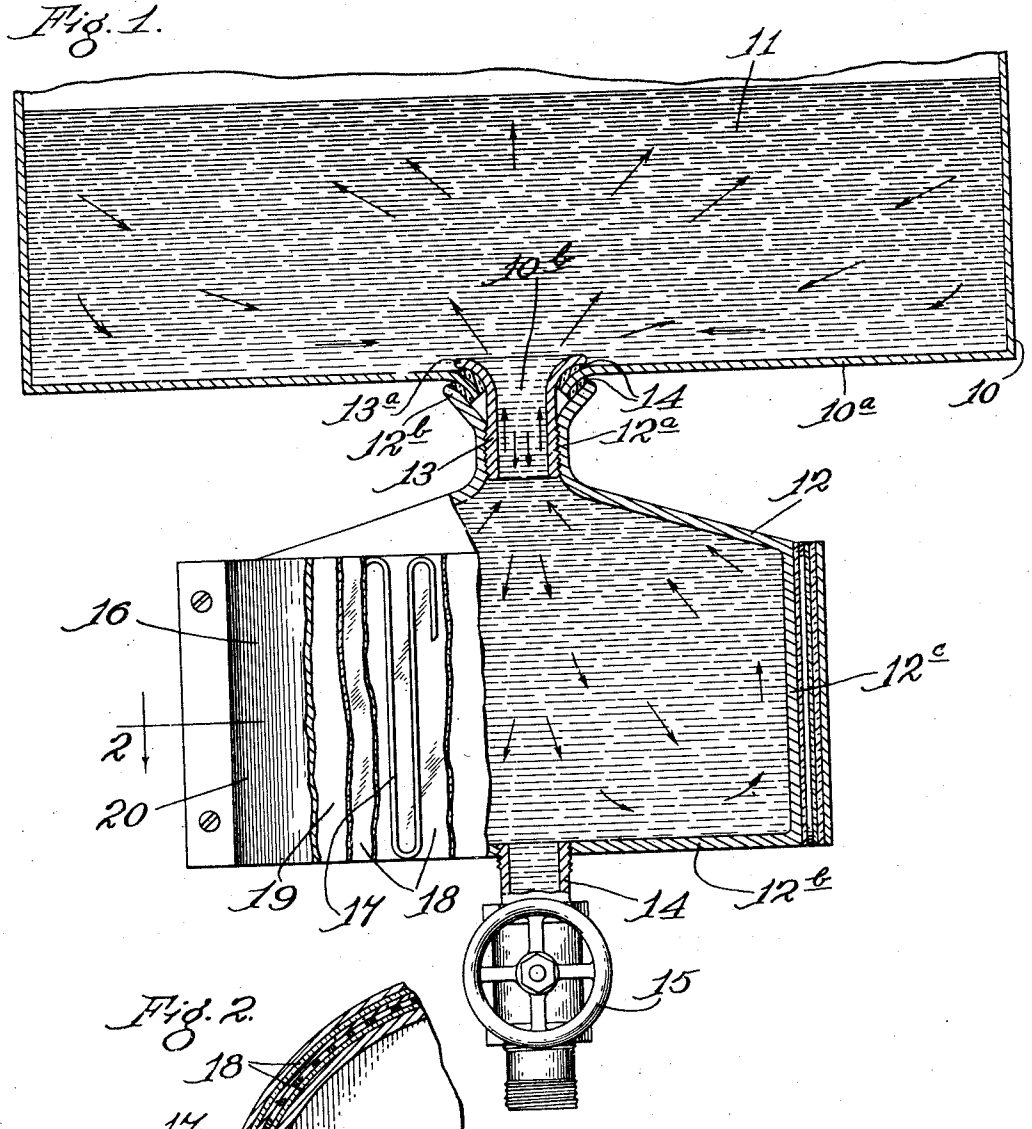
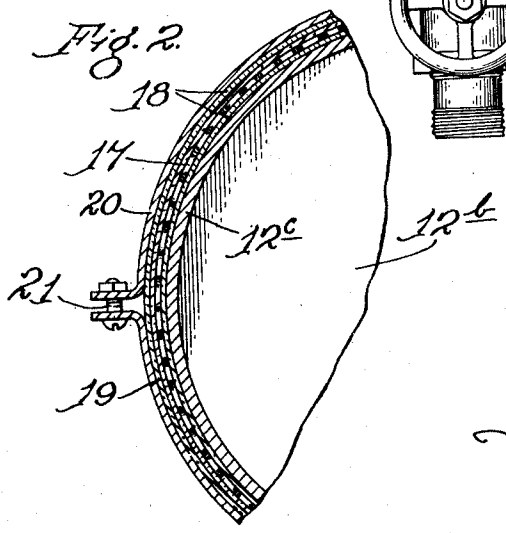


Fig. 2.



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UNITED STATES PATENT OFFICE

EARLE W. BALLENTINE, OF CHICAGO, ILLINOIS, ASSIGNOR TO SOLAR INDUSTRIES, INC., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS

HEATER FOR WASHING MACHINES

Application filed July 25, 1931. Serial No. 553,183.

This invention relates to improvements in heaters for washing machines and, more especially, a device for heating the water of the ordinary form of washing machine which includes the usual tub.

Among the features of my invention is the provision of such a heater that is simple in construction and efficient in service. My heater includes a water chamber positioned below the bottom of the tub, so that there will always be water in the chamber if there is any water at all in the washing machine.

The heater is so arranged that it will operate normally at relatively low temperatures, the heat being dissipated largely by thermo-siphon action.

My improved heater is also constructed so that the same is self-cleaning.

Other features and advantages of my invention will appear more fully as I proceed with my specification.

In that form of device embodying the features of my invention shown in the accompanying drawing—

Figure 1 is a view partly in side elevation and partly in section; and Fig. 2 is a view taken as indicated by the line 2 of Fig. 1.

As shown in the drawing, 10 may indicate the usual tub of a washing machine for holding the water 11. The bottom 10^a of the tub is provided with the usual drain opening 10^b.

Numeral 12 indicates a substantially cylindrical water chamber positioned below the bottom of the tub. This chamber is attached by means of the nipple 13 extending through the drain opening 10^b and provided with a collar or flange 13^a at its upper end. The top of the water chamber 12 is provided with a neck 12^a into which the lower end of the nipple 13 is threaded, the upper end of the neck being provided with a flange 12^b. The flanges 13^a and 12^b grip the edge of the bottom 10^a surrounding the drain opening 10^b. Numeral 14 may indicate packing.

The bottom 12^b of the water chamber is provided with a drain pipe 14 controlled by a valve 15.

Surrounding the side wall 12^c of the water chamber is an electric heating element 16 including an electric resistance wire 17 between the layers of mica 18, 18. Numeral 19 indicates a layer of asbestos outside of the outer layer of mica, and 20 indicates a tight metal band on the outside, the ends of which are clamped together by the bolt 21.

It will be seen that a relatively small amount of water remaining in the washing machine will serve to keep the chamber 12 filled and when there is water in it, a relatively large amount of heat will be carried away by thermo-siphon action. In the event the chamber should become empty, damage is not likely to result since, in such case, the heat from the element will be radiated outwardly. The heating unit is designed to operate at a relatively low temperature and will heat the entire body of water by the thermo-siphon action above referred to. The drain pipe 14 may serve as the regular drain for the washing machine. By draining the water through the chamber 12, the same will be kept clean.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims, in which it is my intention to claim all novelty inherent in my invention as broadly as permissible, in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is:

1. In combination with a washing machine having a tub with a drain opening therein, a water chamber below the bottom of the tub attached to said drain opening, there being a water connection through said drain opening from the tub into said chamber; and means for heating the chamber.

2. Apparatus as claimed in claim 1 in which the chamber is provided with a drain pipe.

3. In a mechanical washing machine in combination with a vat adapted to receive a washing mechanism and having an orifice in the bottom thereof, of a liquid outlet

conduit secured to the vat in communication with said orifice, said conduit having its intermediate portion enlarged to form a liquid receptacle and provided with a discharge spout in communication with said bottom, a control valve associated with said spout, and an electrical heating unit encircling the receptacle.

In witness whereof, I have hereunto set my hand, this 23rd day of July, 1931.

EARLE W. BALLENTINE.