

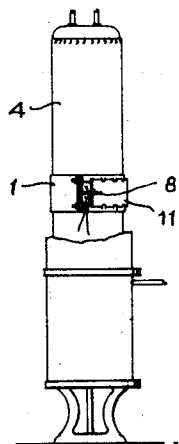
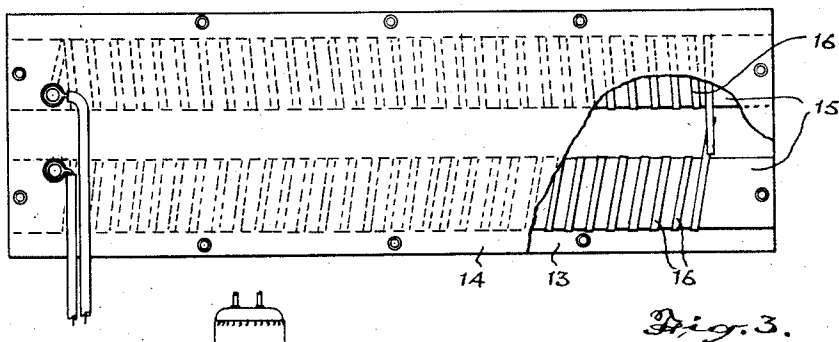
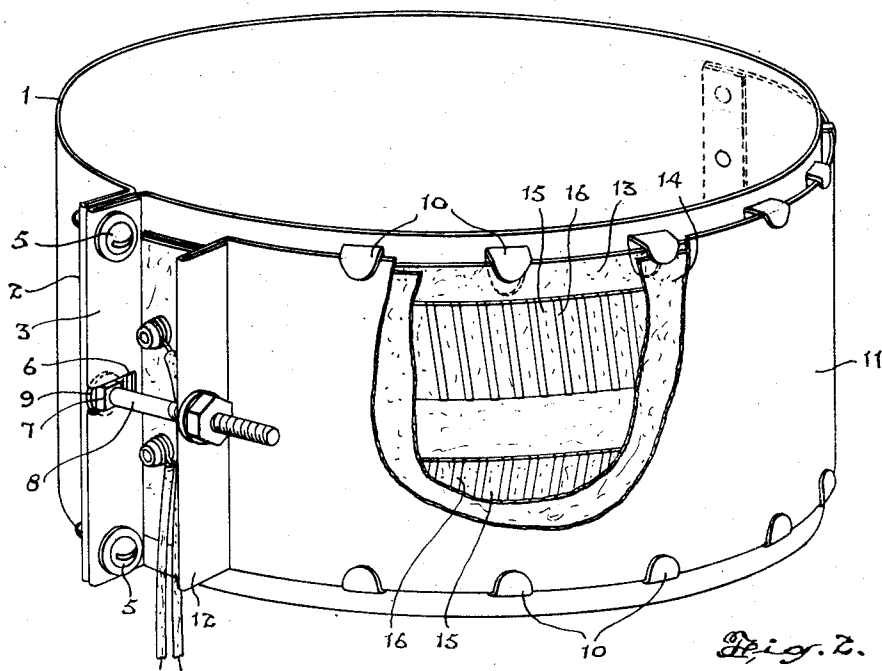
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ELECTRIC TANK WATER HEATER

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UNITED STATES PATENT OFFICE

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ELECTRIC TANK WATER HEATER

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3 Claims. (Cl. 219—38)

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This invention relates to improvements in heaters for electrically heating the water in tanks and principally cylindrical tanks and the principal objects of the invention are to provide a heater which may be applied directly to a tank without the necessity of perforating the tank in any way or of shutting off the water supply to said tank, thereby enabling the heater to be placed in service practically instantaneously or as quickly as the wiring of the electric service thereto can be effected.

A further object of the invention consists in the novel form of the heater which will enable one or more heaters to be applied to a tank in selected position.

A still further important object is to provide a heater which will apply its heat for the transfer to the water over a large distributing area.

The principal feature of the invention consists in placing an electric heating element in heat transfer relation to the circumferential wall of a heater tank and further, to devise a sheet metal band to embrace a cylindrical tank having a circumferentially arranged pocket adapted to hold a flat electric heating element in close engaging contact with the band to effect the transfer of its heat directly through the band to the tank.

In the accompanying drawings

Figure 1 is a small elevational view showing a tank with my electric heater shown applied thereto.

Figure 2 is an enlarged perspective view of my improved heater shown partly broken away to illustrate the arrangement of the electric heating element therein.

Figure 3 is a plan detail of the electric heating element showing one of the insulating sheets partly broken away.

In the electric heating of water it has been customary to use an immersion pipe in which a tubular form of heating element is immersed in the water in the tank and secured to the body of the tank, or a circulating pipe in which the water is passed has an electric heating element wound therearound.

The present invention aims to greatly simplify the application of a water heater to a water system and the present invention in its practical form comprises a band 1 preferably formed of sheet metal which may be simply a strip of galvanized iron having its ends preferably turned outwardly in a return bend to form the meeting flanges 2 and 3. The band is intended to closely encircle the tank 4, and the flanges 2 and 3 are securely clamped by screws 5.

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The flange 3 is preferably formed with a slot 6 extending inwardly from its outward edge, and in this slot is inserted the squared portion 7 of a bolt 8, the head 9 of which fits between the flanges 2 and 3.

The band 1 is preferably formed with a plurality of lugs 10 punched outwardly therefrom and arranged close to the upper and lower edges.

A strip 11 of sheet metal, similar to the band 1, and of slightly lesser width, is fastened at one end to the band 1 and is provided at its end adjacent to the flanges 2 and 3 of the band 1 with a return bend forming a flange 12. This flange is slotted to receive the bolt 8 by means of which the metal strip 11 may be drawn tightly against the band 1.

Inserted between the band 1 and the strip 11 is a flat insulated member formed of a pair of flat sheets 13 and 14 of suitable heat-conducting insulating material such as mica, and between these sheets are arranged a pair of narrower longitudinal sheets or strips 15 around which are spirally wound the thin, flat heating element lengths 16.

Suitable terminals to these heating elements are arranged at the end of the insulating member between the flanges 3 and 12. Suitable wiring may be connected to these terminals to lead to a suitable control switch.

After the heater band described has been placed upon a tank and drawn tightly into position it may of course be covered on the outside with any suitable form of heat insulating covering, and it will be seen that the heat generated by the element 16 will be applied directly through the enclosing band and the wall of the tank so as to heat an extremely large area of the tank surface. Consequently a very quick exchange of heat will be effected and consequently the water in the tank will be heated rapidly.

Any desirable number of these bands may be applied to a tank in order to obtain very rapid heating of a large quantity of water if desired and of course in applying this heater to a tank it may be applied at any suitable or desirable position in the length of the tank.

What I claim as my invention is:

1. An electric tank water heater comprising, a flexible metal band adapted to embrace a tank and having flanged ends, means adjustably connected to the flanged ends of said band to tighten same about the surface of the tank, an adjustable flexible metal strip having one end rigidly connected to said band, a flat flexible removable electric heater element interposed beneath said

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flexible strip, and means for tightening the other end of said flexible strip to securely embrace said flexible heater element.

2. An electric tank water heater comprising, a flexible metal band adapted to embrace a tank and having flanged ends, bolts connecting said flanged ends to secure said band tightly to said tank, an adjustable flexible metal strip having one end connected to said band and extending partly around said band, a flat flexible removable electric heater element enclosed between insulating sheets interposed between the outside of said band and said strip attached to said band, and a bolt secured to said band and detachably connected to said electric heater element holding strip.

3. An electric tank water heater comprising, a flexible metal band adapted to embrace a tank and having flanged ends, means adjustably connected to the flanged ends of said band to tighten same about the surface of the tank, an adjustable flexible metal strip having one end rigidly connected to said band and having the other end

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flanged, a flat flexible removable electric heater element interposed beneath said flexible strip, and a bolt extending through one of the flanged ends of said band and through the flanged end of said flexible strip for tightening said strip to securely embrace said flexible heater element.

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