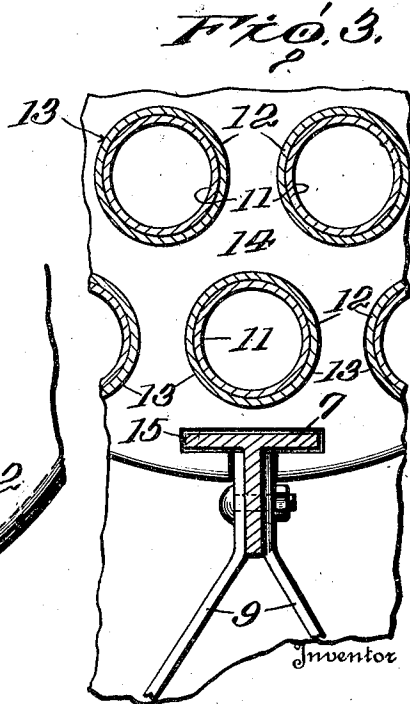
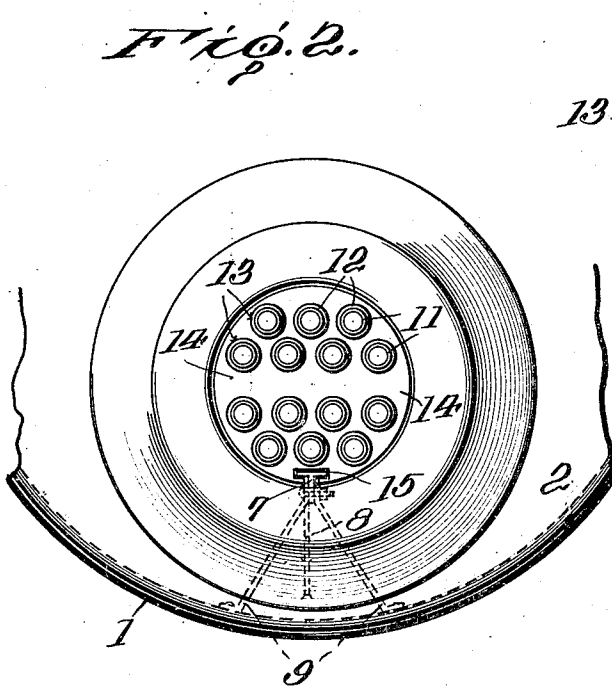
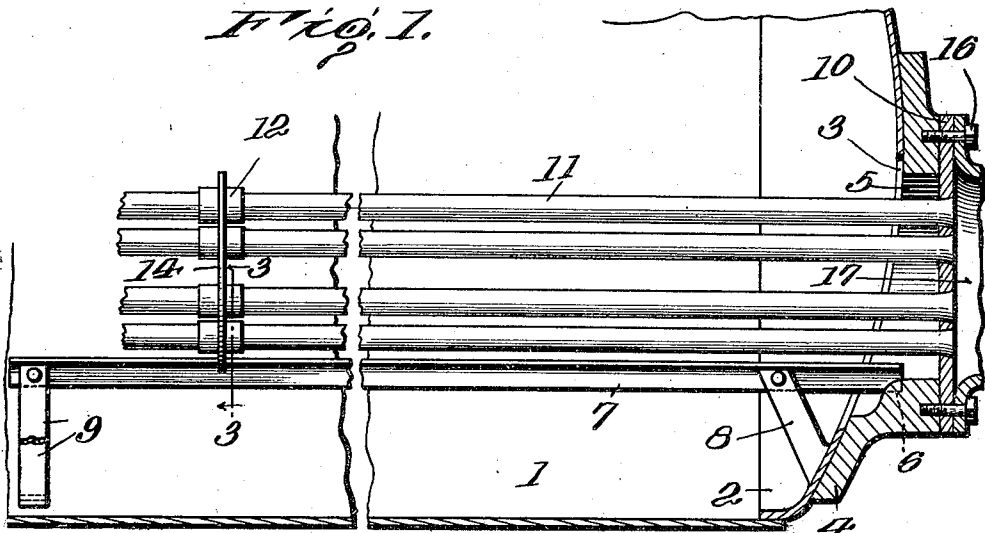


W. M. WRIGHT.
 HEATING ELEMENT SUPPORT FOR WATER HEATERS.
 APPLICATION FILED APR. 21, 1921.

1,435,364.

Patented Nov. 14, 1922.



W.M. Wright.

By *W.M. Wright* Attorney

UNITED STATES PATENT OFFICE.

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HEATING-ELEMENT SUPPORT FOR WATER HEATERS.

Application filed April 21, 1921. Serial No. 463,104.

To all whom it may concern:

Be it known that I, WILLIS M. WRIGHT, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Heating-Element Supports for Water Heaters, of which the following is a specification, reference being had therein to the accompanying drawing

This invention relates to certain new and useful improvements in heating element supports for water heaters, the object being to provide a rigid non-vibratory support for supporting the heating element within a tank in such a manner that the element as a unit can be removed for cleaning or repairing, thereby overcoming the difficulties now existing in tanks of this character by having to remove the man-hole cover and crawl into the tank to remove the braces for supporting the heating element

Another and further object of the invention is to provide a construction of support wherein the U-tubes of the heating element are arranged in copper or other metal tube sleeves disposed within a steel or iron disk so as to rigidly support the inner ends of the tubes and in such a manner that the metal tubes are supported within tubes of the same or similar metal so as to prevent any electrolytic action.

Another and further object of the invention is to provide a heating element support which is exceedingly simple and cheap in construction and one in which the heating element is slidably mounted within the tank in such a manner that when the cover of the tank is removed, the heating element can be drawn out through the opening so that the scale or any other repair necessary can be made.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof will be defined in the appended claims,

In the drawings,

Figure 1 is a longitudinal vertical section through a portion of the tank, showing the application of my improved construction of heating element support;

Figure 2 is an end elevation, the tube plate being removed, showing the support and

U-tubes disposed in the support plate which is slidably mounted on the T-bar; and

Figure 3 is an enlarged vertical section taken on line 3—3 of Figure 1.

In the drawings 1 indicates a tank which may be of the ordinary construction now in use having a man-hole at one end (not shown) and provided at its opposite end with a head 2 having an opening 3 over which is arranged a housing 4. The particular construction of tank is immaterial as I am aware that various constructions of tanks can be used without departing from the spirit of my invention as in some instances the shell of the tank is provided with a head having an opening and the housing as a separate element is dispensed with and therefore I do not wish to limit myself to the use of any particular construction of tank.

The housing 4 is provided with an opening 5 registering with the opening 3 of the head of the tank having a T-bar 7 horizontally disposed within the tank and supported at its forward end by a brace 8 which is bolted or welded to the stem of the T-iron 7 and has its other end rigidly secured to the head of the tank by welding or riveting the same or by welding the T-iron directly to the housing 4 when the same is made of steel.

The inner end of the T-bar 7 is supported by a brace 9, the upper end of which is secured to the stem of the T-bar by bolts or welding, the lower end being welded or riveted to the shell of the tank so as to support the T-bar rigidly in a horizontal position in a horizontal plane slightly above the lower edge of the opening 5 of the housing 4.

Secured over the housing 4 is a steel or cast iron tube plate 10 in which the ends of U-tubes 11 are expanded in the usual manner, said U-tubes extending through short lengths of copper or other metallic tube sleeves 12 which are expanded into openings 13 formed in a perforated disk 14 so that the metallic tubes 11 are in contact with short metallic tube sleeves 13 of similar metal to the tubes 11 so as to prevent any electrolytic action.

The particular construction of U-tube to form a U-bend type of heating element is immaterial and therefore I do not wish to limit myself to the particular construction of heating elements used as I am aware that under certain conditions the type of heating

element can be varied without departing from the spirit of my invention.

The disk 14 is provided with a substantially T-shaped slot 15 to receive the T-iron 7 and upon which the disk is slidably mounted so that the heating element can be inserted and removed very quickly by simply removing the bolts 16 employed for holding the cover 17 and tube plate 10 to the housing. 10
When the cover is removed, the tube plate can be withdrawn so as to remove the heating element as a unit as the supporting disk 14 slides on the T-iron 7 in such a manner that the heating element can be withdrawn 15 through the opening 5 of the housing so as to allow the heating element to be cleaned or repaired, thereby overcoming the difficulties now existing of having to crawl in through the man-hole of tanks of this character and remove the braces so as to allow the heating element to be removed.

From the foregoing description it will be seen that I have provided a heating element support for storage and hot water heaters comprising a guide member on which is slidably mounted a supporting disk carrying the inner end of a heating element in such a manner that the heating element is free to slide inwardly and outwardly on the guide member so that the heating element can be readily inserted or removed and when in position within the tank is supported in a rigid manner by pipe sleeves arranged to receive the legs of the U-bend of the heating element. 20
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What I claim is:—

1. The combination with a tank having an opening at one end through which is adapted to be inserted a heating element, of a guide member mounted in said tank and a heating element having a sliding and interlocking connection with said guide member. 40

2. A heating element support for tanks comprising a guide member, a supporting

member having a sliding and interlocking connection with said guide member and a heating element carried by said supporting member. 45

3. A support for storage and hot water heaters comprising a heating element composed of metal tubes having a tube plate at its outer end and a supporting plate adjacent its inner end, a guide member for said supporting plate and means for supporting said heating element within said supporting plate by tube sleeves. 50
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4. The combination with a tank having an opening at one end, of a horizontal guide member disposed within said tank and rigidly supported therein, of a heating element composed of a plurality of tubes capable of being inserted and removed through said opening and a plate for supporting said heating element having a slot corresponding in shape to said guide member and upon which said plate is slidably mounted. 60
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5. The combination with a tank having an opening, of a heating element adapted to be inserted through said opening, a member for supporting the inner end of said heating element having an opening and a guide member disposed within said tank conforming in shape to the opening in said supporting member and upon which said member is slidably mounted. 70
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6. The combination with a tank having an opening at one end, of a substantially T-shaped guide member disposed in said tank in a plane above the lower wall of said opening, of a supporting member having an opening corresponding in shape to said guide member slidably mounted upon said guide member and a heating element carried by said supporting member. 80

In testimony whereof I hereunto affix my signature. 85

WILLIS M. WRIGHT.