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ANODE FOR HOT WATER TANKS

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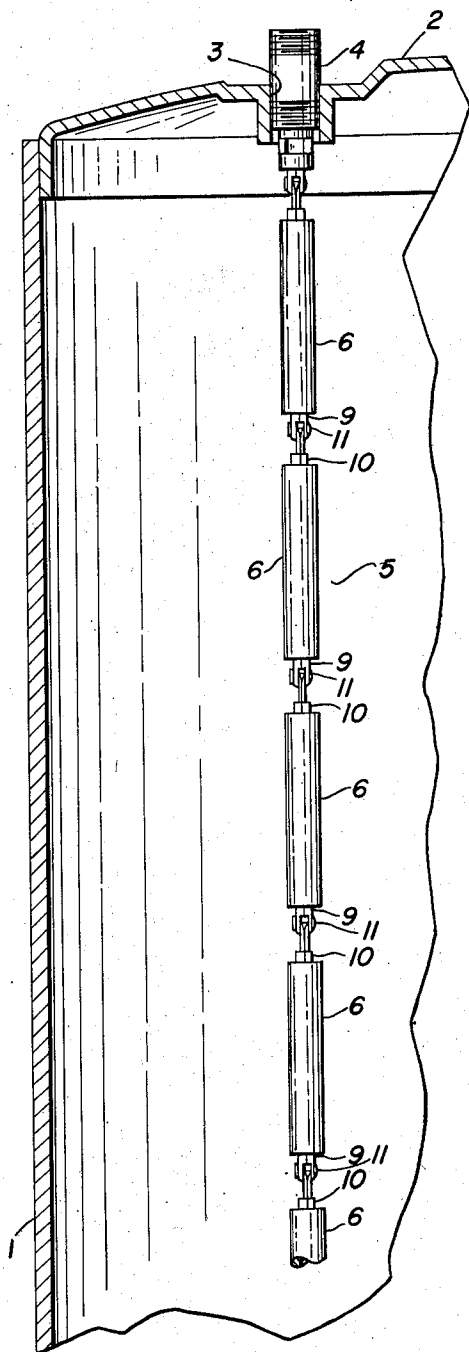


Fig. 1

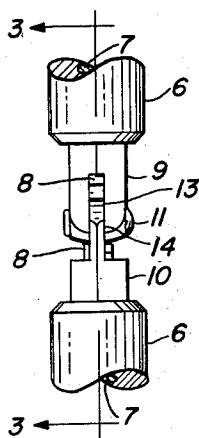


Fig. 2

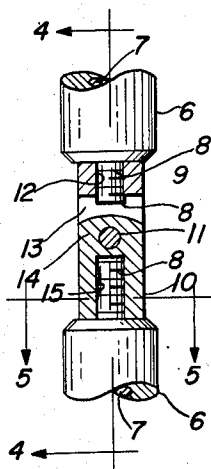


Fig. 3

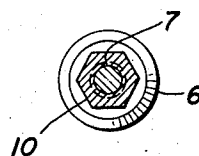


Fig. 5

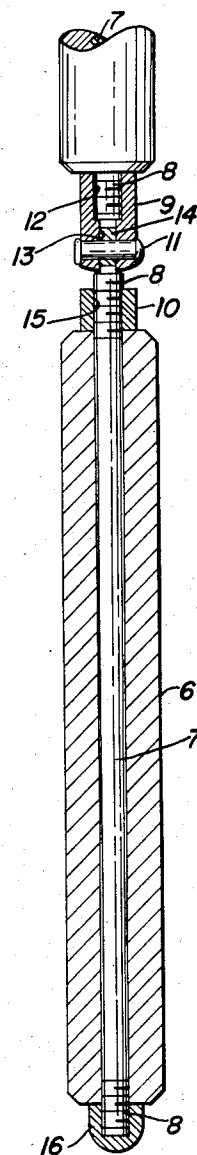


Fig. 4

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ANODE FOR HOT WATER TANKS

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1 Claim. (Cl. 204—197)

This invention relates generally to anodes for hot water tanks, but has reference more particularly to an anode which is so designed as to greatly facilitate insertion of the anode into a hot water tank, where the headroom or space between the top of the tank and the ceiling of the room is limited.

It has heretofore been common practice to use protective anodes in hot water tanks, such anodes consisting of long rigid rods or tubes which are inserted into the tank through the top of the tank, and then threadedly secured to the top of the tank. Exemplary of this is the anode shown in Bates patent No. 2,459,123.

Due to the extreme length of the anode in such cases, however, the anodes being substantially as long as the hot water tank, it is virtually impossible to utilize such anodes in cases where the space between the top of the tank and the ceiling of the room is less than the overall length of the anode, unless the anode is installed in the tank before installation of the tank, or unless the tank is first disassembled and then reinstalled.

The present invention has as its primary object the provision of a protective anode for hot water tanks and the like, which is so constructed as to render possible easy insertion of the anode into the tank, in cases where the space between the top of the tank and the ceiling of the room is less than the overall length of the anode, such insertion or installation being effected after the tank is installed, and without any necessity of dismantling or disassembling the tank.

Another object of the invention is to provide a protective anode of the character described, which is of articulated construction, consisting of anode units of relatively short length, which are connected or joined to each other by means of joint units of unique construction.

A further object of the invention is to provide a joint for connecting the units of such an anode, which joint is of novel construction, embodying pivotally movable parts.

Other objects and advantages of my invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a fragmentary view of a hot water tank, with portions thereof removed to clearly show an anode embodying the invention;

Fig. 2 is a fragmentary elevational view, showing a joint between units of the anode;

Fig. 3 is a fragmentary cross-sectional view, taken on the line 3—3 of Fig. 2;

Fig. 4 is a cross-sectional view, taken on the line 4—4 of Fig. 3, and

Fig. 5 is a transverse cross-sectional view, taken on the line 5—5 of Fig. 3.

Referring more particularly to the drawings, reference numeral 1 designates a portion of a hot water tank, and 2, the top of said tank. The top is provided with a flanged opening 3, which is threaded for the connection thereto of a nipple 4, which supports the anode, which is generally designated by reference numeral 5.

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The anode 5 consists of relatively short lengths or units 6 of tubular stock, which may be made of magnesium, these units being spaced from each other axially, as best shown in Fig. 1.

Each unit 6 has slidably fitted therein a metallic rod 7, provided with threaded ends 8, which project beyond the ends of the unit, to provide means for securing a coupling or joint between the units.

Each coupling comprises three parts or elements, respectively designated by reference numerals 9, 10 and 11.

The elements 9 and 10 are preferably made from solid brass stock of hexagonal cross-section. The element 9 has a base portion which is provided with a threaded bore 12 for the connection thereto of one of the ends 8 of the rod 7, and has its other end longitudinally slotted to provide a recess 13 for the reception of the flat tongue 14 of the element 10. The element 10 has a base portion which is provided with a threaded bore 15 for the connection thereto of the end 8 of the rod 7 which extends through an adjacent unit 6.

The element 11 is a rivet, which extends through the element 9 and tongue 14, and constitutes a pivot pin for permitting pivotal movement of the element 10 with respect to the element 9, in a single plane, but through an angle of more than 90 degrees in each direction from the axis of the axially aligned units 6.

The aforesaid coupling or joint between the units permits the units 6 to be pivotally movable with respect to each other through an angle of more than 90 degrees in two directions, and this enables each unit to be successively introduced through the opening 3 of the tank, while maintaining the trailing portion of the anode in a substantially horizontal position. In this way, the entire anode may be installed in the tank with great facility, and even in cases where the space between the top of the tank and the ceiling is only slightly greater in height than the length of a single unit 6. After the anode has been introduced into the tank in its entirety, the nipple 4 is threadedly secured in the opening 3, as shown in Fig. 1.

A nut 16 may be secured to the end 8 of the rod 7 which extends through the lowermost unit 6, to support the lowermost unit against displacement from the anode as a whole.

It will be noted that the elements 9 and 10 can be drawn up tightly against the ends of the units 6, and this is of considerable advantage, since these elements, in this way, are effective to maintain the units 6 in properly assembled relation with the rods 7, and against displacement axially from such rods.

The anode, as thus described, is of simple, sturdy construction, and is well adapted for the purposes for which it has been designed.

The construction is such as to enable the parts of the anode to be quickly and easily assembled, and also to permit easy disassembly for the purpose of replacing worn or corroded parts.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of my invention, or the scope of the subjoined claim.

Having thus described my invention, I claim:

An anode for the protection of hot water tanks and the like, said anode comprising a pair of axially-spaced tubular units, each having a substantially flat end, a rod extending through each unit and provided with a terminal threaded portion extending beyond said flat end and into the space between said units, and means in said space for coupling said rods, said means comprising a pair of elements each having an axial threaded bore for reception

of one of said terminal portions, said elements bearing against said flat ends, one element of each pair being longitudinally slotted to provide a recess, and the other element of said pair being provided with a flat tongue extending into said recess, and a pin extending through said tongue and slotted portion of said one element constituting a pivot for permitting pivotal movement between the elements of said pair.

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