

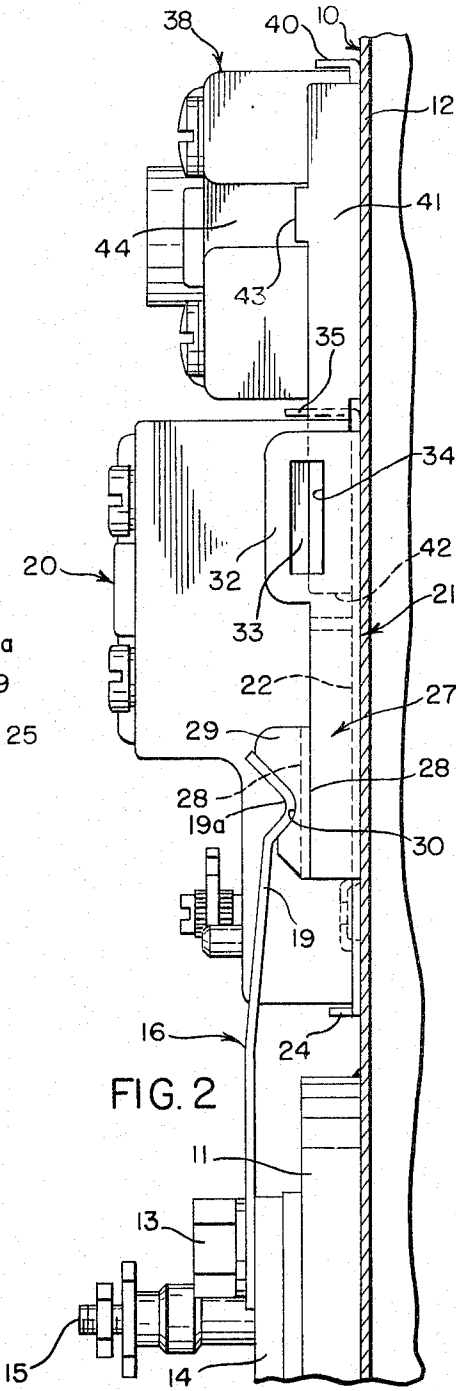
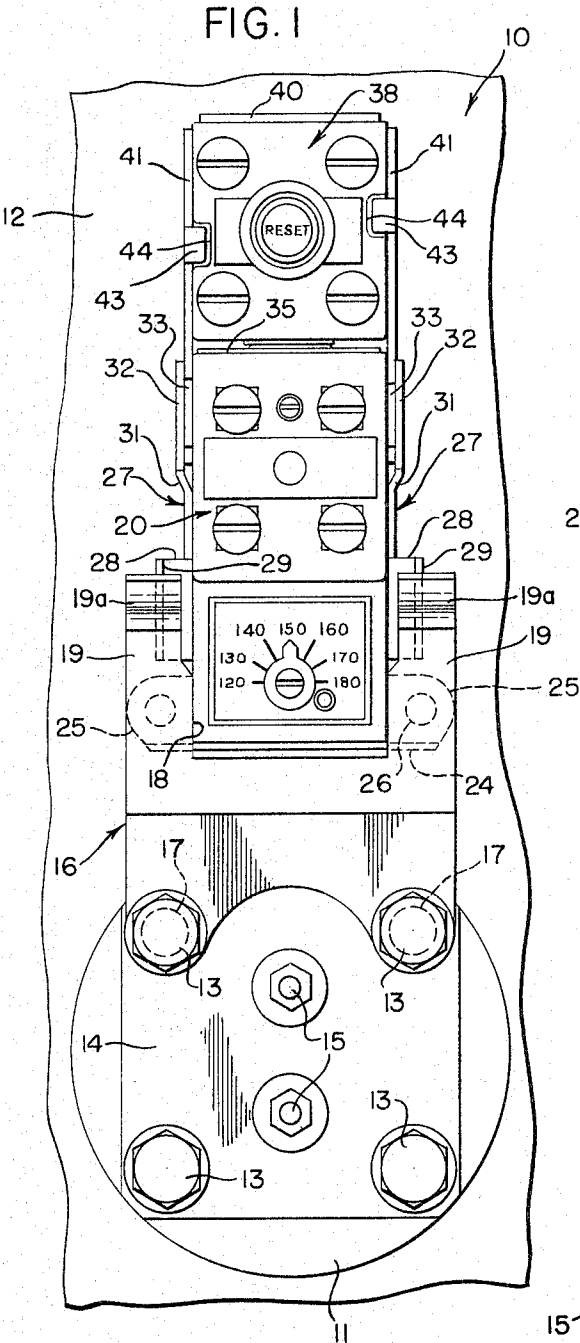
Oct. 4, 1966

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MOUNTING ASSEMBLIES

3,276,599

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2 Sheets-Sheet 1



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FIG. 3

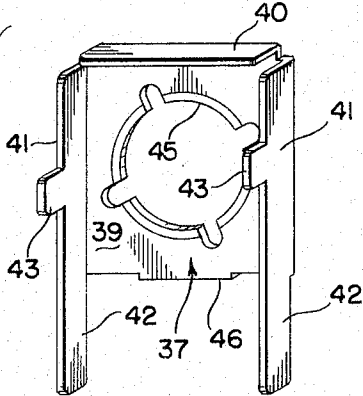


FIG. 4

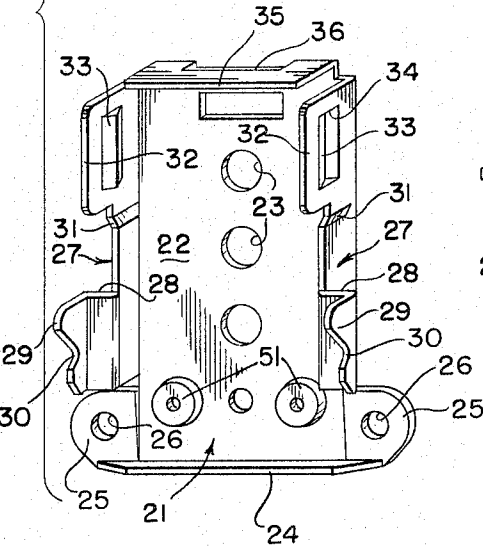
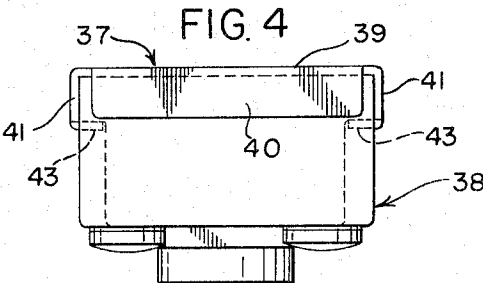


FIG. 5

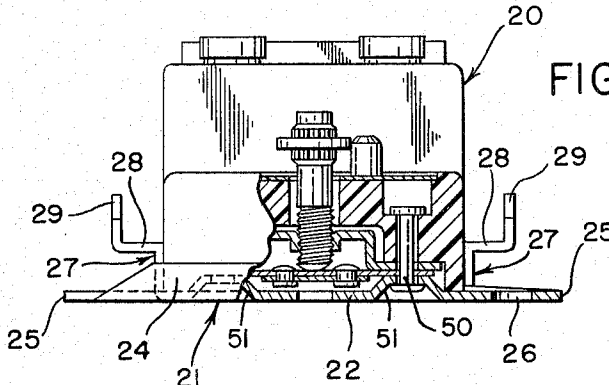
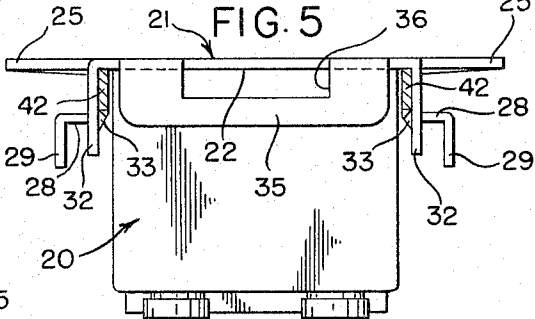


FIG. 6

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MOUNTING ASSEMBLIES

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5 Claims. (Cl. 211-26)

This invention relates generally to mounting assemblies and more particularly to a new and improved assembly for mounting or otherwise securing a plurality of thermostatic control devices in operative position on the exterior surface of hot water tanks and similar appliances.

Heretofore, in the mounting of a plurality of thermostatic control devices on the exterior surface of a hot water heater, it has been the practice to employ two or more bracket members, one of which served to secure the first control device to the wall of the tank while the second bracket served to support the second control device from the mounting of the first device. Although this arrangement had its advantages in that the first control device could be employed to the exclusion of the second, the multiplicity of bracket members required was undesirable. The use of a common mounting member for the two control devices added to the problem in that separate mounting members had to be provided where the control devices were used independently.

It is among the objects of the present invention to provide an assembly for mounting a plurality of control devices upon the exterior surface of a tank which is simple and inexpensive to manufacture, and wherein the mounting plates of the respective control devices embody interengaging means for supporting one control device upon the other.

Another object of the present invention is to provide an assembly for mounting a plurality of control devices on the exterior wall of a hot water tank embodying means for releasably securing one of the control devices with respect to the other.

A further object of the present invention is to provide an assembly for mounting a plurality of control devices on the exterior wall of a hot water tank which embodies a mounting plate arranged to secure one control device to said wall and a second control device positioned above the first control device and having a bifurcated portion embracing the first control device and supported thereby.

These and other objects and advantageous features of the invention, not at this time more particularly pointed out, will become more apparent as the nature of the invention is better understood from the following detailed description taken in conjunction with the accompanying drawings wherein like reference characters denote corresponding parts and wherein:

FIGURE 1 is a front elevational view of a mounting assembly for supporting a pair of thermostatic controls in operative position on the exterior surface of a hot water heater tank in accordance with this invention;

FIGURE 2 is a side elevational view on an enlarged scale of the assembly illustrated in FIGURE 1;

FIGURE 3 is an exploded perspective view of the mounting plates which receive and support the thermostatic controls illustrated in FIGURE 1;

FIGURE 4 is a top plan view of the upper control device and mounting plate assembly illustrated in FIGURE 1;

FIGURE 5 is a top plan view of the lower control device and mounting plate assembly illustrated in FIGURE 1; and

FIGURE 6 is a bottom view of the control device and mounting plate assembly of FIGURE 5 with portions broken away and shown in section.

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With reference to the accompanying drawings, there is illustrated a mounting assembly constructed in accordance with the teachings of the present invention, for supporting a plurality of control devices in operative position on the exterior surface of a hot water tank 10, having a plug member 11 suitably secured within an aperture in the wall 12 of the tank. Secured to the plug member 11 by means of studs 13 is an electrical heating device 14 provided with a heating element (not shown) which projects into the interior of the water tank and serves to heat the water contained therein. Suitable terminals 15 projecting outwardly from the electrical heating device 14 receive lead-in conductors for supplying electric current to the heating element.

Secured to the exterior wall of the tank is a bracket member 16, the lower end of which is provided with suitable apertures 17 which are secured by the studs 13. The opposite end of the bracket member 16 is formed with a substantially rectangular cut-away portion 18 thereby forming spaced prong members 19, the outer ends of which are reversely bent to form V-shaped end portions 19a thereon. As illustrated in FIGURE 2, the bifurcated end of the bracket member 16 is bent downwardly out of the plane of the member so that the ends of the prongs 19 will be biased toward the exterior wall of the tank.

Referring now to FIGURES 1, 3 and 5, the first of the control devices 20 is arranged to be supported in a mounting plate 21 which is of unitary structure with a rear wall 22 substantially rectangular in shape having one or more apertures 23 therethrough of any desired shape. The apertures 23 are provided to permit free circulation of air and the direct radiation of heat from the wall of the tank to the bimetallic actuating member of the control 20 which is closely adjacent thereto.

At one end of the rear wall 22 of the mounting plate 21 and integrally formed therewith is a horizontal end wall or base 24, generally trapezoidal in shape, extending from the rear wall in a direction away from the wall of the tank and serving as a vertical support for the control device 20. The base 24 extends outwardly beyond the lateral extent of the rear wall 22 to provide reinforcement to mounting ears 25 formed integrally with rear wall 22. Mounting ears 25 positioned at the bottom of and on each side of the rear wall 22 are in the same plane as, or in planes parallel to, the plane of the rear wall. The ears can be used in securing the control device 20 to other objects (not shown), and for this purpose are provided with openings 26.

Along each vertical side of the rear wall 22 the mounting plate is provided with an outwardly extending side wall 27. A portion of each of the side walls 27 is bent outwardly in a plane parallel with the wall 22 to form the ledge 28 and then is extended at right angles thereto to form ears 29. The projecting ears 29 are provided with suitable notches 30 to receive the V-shaped end portions 19a of the prongs 19 of the bracket member 16. The prongs or arms 19 of the bifurcated end of the bracket 16, as heretofore stated, are biased inwardly toward the wall 12 of the water tank to provide spring pressure sufficient to hold the mounting plate 21 and the control device supported thereby snugly against the exterior wall surface of the tank. The upper ends of the side walls 27 are spaced outwardly by angulated wall portions 31 to form offset side wall portions 32 extending parallel with the side wall 27 to the end of the member 21. Pendants 33 are formed by cutting along three sides of a rectangle in each of the wall portions 32, and bending the free edge thus formed inwardly along the fourth side of the rectangle. The inturned pendants are cut away to form a rectangular slot 34 in the wall portion 32. The wall portion 32, pendants 33, exterior wall surface of the control 20, and the rear wall extending laterally beyond the con-

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trol define a latch for the reception of extensions on the side of a second mounting plate as will be described hereinafter.

At the top of the mounting plate 21 there is formed an end wall 35 extending outwardly from the wall 22 which serves to provide confinement for the control device 20 positioned in the mounting plate 21. The end wall 35 may be suitably slotted as at 36 to receive a complementary protrusion formed on the upper surface of the device and thus aid in securing the control device in assembled position. As shown in FIGURE 6, the control 20 and mounting plate 21 therefor are secured together by means of suitable rivets 50 extending through bosses 51 formed on the rear wall 22 of the mounting plate.

A second mounting plate 37 is arranged to receive a second control device 38 and includes a rear wall 39, a suitable end wall 40 extending outwardly from the rear wall 39 and side walls 41 which also extend outwardly from the rear wall 39 away from the tank. The side walls 41 are extended downwardly beyond the rear wall 39 to form spaced legs 42. Aligned tabs 43 are formed in the side walls 41, and when the control device 38 is positioned in the mounting plate these are bent inwardly and engage in slots 44 formed in the opposed side walls of the housing of the device to secure the same in assembled position. The rear wall 39 of the plate is cut away as at 45 to provide for the direct transfer of heat from the wall of the tank to the bimetallic actuating member of the control device 38.

The second mounting plate 37, also a unitary structure, supporting the second control device 38 may be readily mounted on the water tank by engaging the legs 42 into the latch formed on the mounting plate assembly of the control device 20 as hereinafter described. The edges of the pendants 33 serve to guide the legs 42 and the size of the pendants 33 is such that the space between the edges of the pendants 33 and the rear wall 22 is that required to secure snugly the legs 42 within the respective latches. An extension 46 on the rear wall 39 may be provided as shown in FIGURE 3 to interlock with the slot 36 provided in the end wall 35 and thus securely assemble the two units together. Separation of the two control devices may be made with similar ease simply by pulling upward on the mounting plate 37 carrying the control device 38.

Having thus described my invention so that those skilled in the art may understand and practice the same, what I desire to obtain by Letters Patent is embodied in the appended claims.

I claim:

1. An assembly for mounting a plurality of control devices upon the exterior surface of a tank comprising a mounting plate, a bracket member having a mounting portion arranged to be secured to said surface and a bifurcated end portion adapted to embrace ears on said mounting plate, a second mounting plate positioned above said first mounting plate and having a downwardly extending bifurcated portion, interlocking means formed on the said first mounting plate for receiving and securing the bifurcated portion of said second mounting plate, and means on each plate adapted to mount a control device.

2. An assembly for mounting a plurality of control devices upon the exterior surface of a tank comprising a

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mounting plate, a bracket member having a mounting portion arranged to be secured to said surface and a bifurcated end portion adapted to embrace ears on the lower end of said mounting plate, a second mounting plate positioned above said first mounting plate and having a depending bifurcated portion embracing the upper end of said first mounting plate, interlocking means for removably securing said first and second mounting plate together, and means on each plate adapted to mount a control device.

3. An assembly for mounting a plurality of control devices upon the exterior surface of a tank comprising a mounting plate, a bracket member having a mounting portion arranged to be secured to said surface and a portion engaging ears formed on said mounting plate, forwardly extending flange members formed on the sides of said mounting plate, a second mounting plate positioned above said first mounting plate, downwardly projecting side members formed on the second mounting plate, said side members adapted to be received by the flange members on said first mounting plate for securing the first mounting plate in operative position with respect to said second mounting plate, and means on each plate adapted to mount a control device.

4. In an assembly for securing a plurality of control devices to the exterior surface of a tank, a mounting plate for supporting a first control device, said mounting plate having forwardly extending portions formed along the sides thereof for the reception of the bifurcated end of a mounting bracket, latch means formed on the side wall portions of said mounting plate, a second mounting plate for supporting a second control device, said second mounting plate positioned above said first mounting plate and having depending spaced legs received and secured by the latch means formed on said first mounting plate.

5. An assembly for mounting a plurality of control devices upon the exterior surface of a tank comprising a bracket member having a mounting portion adapted to be secured to the exterior surface of a tank and a bifurcated end portion, a first mounting plate adapted to receive a control device, notched flange members extending outwardly from the side of said mounting plate receiving the ends of the bifurcated end of said bracket member, latch means formed on upper side walls of said mounting plate, a second mounting plate positioned above said first mounting plate adapted to receive a second control device, depending members formed on said second mounting plate, said members embraced by said first mounting plate and received in said latch means when said second mounting plate is in assembled position on said first mounting plate.

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