

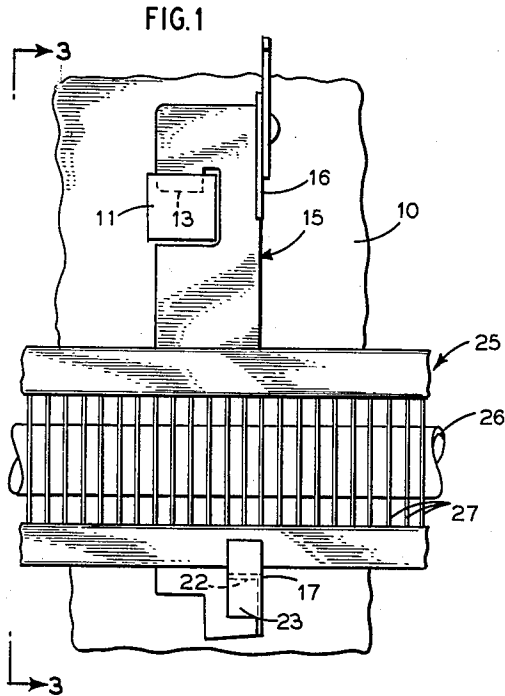
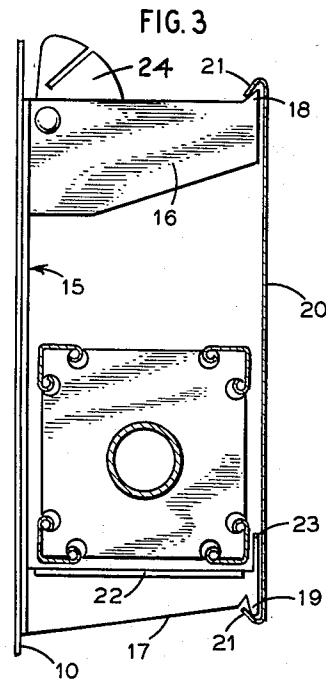
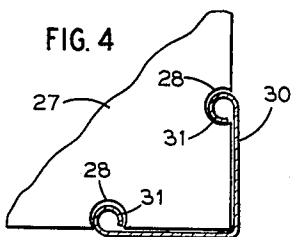
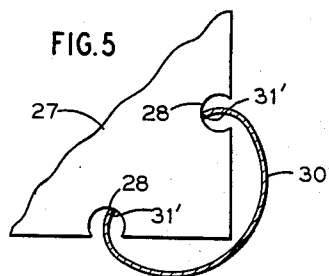
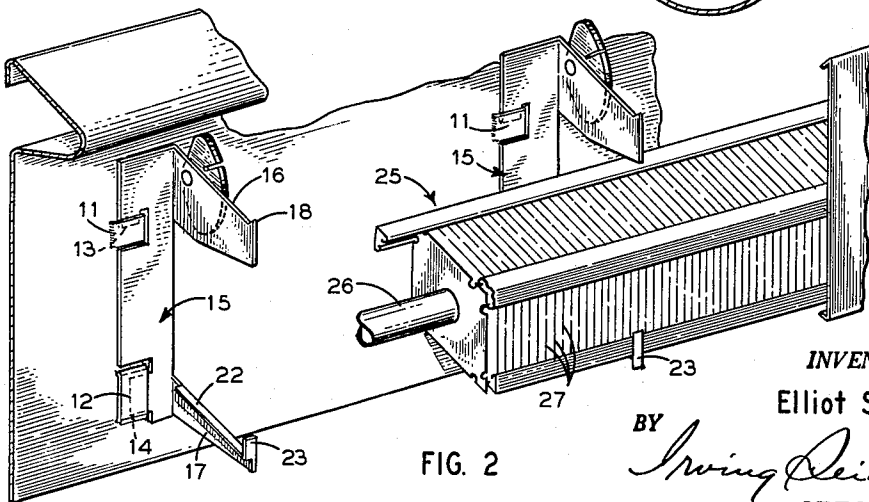
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FINNED HEATING UNIT WITH GUIDE RAILS

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FINNED HEATING UNIT WITH GUIDE RAILS

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3 Claims. (Cl. 257—133)

This invention relates to finned tube and baseboard radiation units and, more particularly, to an improved and simplified means providing for ready movement of such units on their supports during expansion and contraction.

The installation of finned tube radiation units presents a problem in accommodating expansion and contraction, particularly in relatively long units or long installations involving rectilinearly interconnected units. The units normally are positioned with their edges on support shelves or brackets, or on arms or brackets extending between adjacent fins. In the first case, sliding of the fins over the brackets, during expansion and contraction of the installation will damage the edges of the fins. In the second case, the arms prevent or limit movement during expansion and contraction.

For this reason, various relatively expensive and complicated cradle constructions have been used to embrace the lower edges of the fins and serve as a guide shoe interposed between the fin edges and the support shelf. Proper installation of these cradles on the finned tubes and their support brackets is time consuming and costly.

In addition, and particularly in the case of square or rectangular fins, the sharp corners present hazards to personnel, and thus protecting covers must be used to prevent persons being injured by the fin corners. These covers frequently interfere with the flow of convection heating currents over the finned tubes, thus decreasing the heating efficiency of the installation.

The sharp corners also are hazardous to the installer, and the exposed edges of the fins are readily damaged during installation unless the greatest of care is used. The fin edges, furthermore, make it difficult for an installer to handle the heavier units without protection for the hands.

In accordance with the present invention, the foregoing difficulties are avoided and an improved, simplified and inexpensive expansion accommodating means is provided in a novel manner. More particularly, in the case of rectangular or square fins, each fin edge is formed with a pair of notches, one adjacent each corner or, in the case of curvilinear, such as circular and elliptical fins, pairs of notches are formed at circumferentially spaced intervals in each fin. These notches can be readily cut or stamped in the fins during manufacture thereof.

Each associated pair of notches receives the re-entrant free edges of an elongated track section of substantially angular or open tube cross section. The re-entrant edges snap or are slid into the notches and thus cover and protect the fin corners with the outer surfaces of the tracks projecting beyond the fin edges. The tracks form both protectors for the fin corners, eliminating the need for a cover, and rails supporting the fins for sliding movement on their support brackets, eliminating the necessity for special cradles.

The tracks may be made of any suitable metal or any suitable moldable or extrudable plastic. The latter

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material is desirable in installations in hospitals or the like as it eliminates any noise due to movement of the units during expansion and contraction.

The tracks further serve to reinforce the units and facilitate handling thereof during installation. The tracks may be readily cut where it is necessary to shorten a unit, and may be locked in position by expanding their ends to interlock these ends with the notches in the end fins of the unit.

For an understanding of the invention principles, reference is made to the following descriptions of typical embodiments thereof as illustrated in the accompanying drawings. In the drawings:

Fig. 1 is a partial front elevation view of a finned baseboard radiator embodying the invention;

Fig. 2 is a partial perspective view thereof;

Fig. 3 is an end view thereof;

Fig. 4 is an enlarged partial end view further illustrating the connection of the tracks to the fins; and

Fig. 5 is a view similar to Fig. 4 illustrating a modified form of track.

Referring to Figs. 1-4, the invention is illustrated as incorporated in a baseboard heating installation including a finned tube radiator comprising a tube having substantially rectangular fins secured at longitudinally spaced zones therealong. The installation includes a vertically disposed mounting plate 10 arranged to be secured to a wall and having substantially vertically aligned clips 11, 12 at longitudinally spaced intervals therealong.

Clips 11, 12 receive ears 13, 14, respectively, on brackets 15, and serve to support these brackets on plate 10. Each bracket 15 includes an upper, forwardly projecting arm 16 and a lower, forwardly projecting arm 17. Each arm 16 has an upturned ear 18 on its outer end, and each arm 17 has a notch 19 in its under edge adjacent its outer end. Ears 18 and notches 19 serve as anchorages for the inturned lips 21 of a front cover plate 20.

Lower arms 17 serve to support radiator units 25 comprising tubes 26 having fins 27 secured thereto. For this purpose, each arm 17 includes a substantially horizontal flange or shelf 22 and an upturned outer end 23. Slotted clips 24 may be oscillatably pivoted to upper arms 16 to receive a control damper, if one is desired.

As previously stated, the units 25 must be supported for longitudinal and lateral movement to accommodate expansion and contraction. For this purpose, the prior art has relied upon relatively expensive and complicated clip arrangements for accommodating such movement of the lower edges of fins 27 relative to the support shelves.

In accordance with the present invention, the fins 27 are formed with preferably circular notches 28 in each edge and uniformly spaced from each corner. These notches have the re-entrant edges 31 of tracks 30 snapped or slid thereinto, the racks 30 overlying and covering the corners of the fins. Tracks 30 thus act as rails supporting the units for sliding movement on shelves 22. In addition, however, these tracks not only prevent damage to the edges of the fins 27 and serve as protecting covers for the corners, but also actually reinforce the units 25.

In Fig. 4, tracks 30 are shown as angles having circularly incurved re-entrant edges 31 snapping or sliding into notches 28. In Fig. 5, the tracks 30' are shown as open or slotted tubes having free edges 31' snapping or sliding into the notches.

It will be readily appreciated that the invention is also applicable to curvilinear fins, such as circles and ellipses.

While specific embodiments of the invention have been shown and described in detail to illustrate the application of the invention principles, it will be understood that the

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invention may be embodied otherwise without departing from such principles.

What is claimed is:

1. A heating unit including support elements therefor, comprising in combination, an elongated metal tube, a plurality of rectangular metal fins secured to said tube at longitudinal spaced zones therealong and projecting radially therefrom, said fins having peripherally spaced correspondingly positioned notches arranged in the adjacent edges thereof and adjacent the corners of the fins, elongated track elements having unobstructed outer surfaces and a pair of longitudinal edges on each of said track elements adapted to snap into engagement with the respective notches so that the track elements are maintained in engagement with the fins solely by said snapping engagement of said edges with said notches, said unobstructed outer surfaces extending beyond the peripheries of said fins, whereby the track elements function as

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runners in contact with the support elements for said unit during expansion and contraction of the latter.

2. A heating unit as claimed in claim 1, in which said track elements are of angular section and said longitudinal edges have additional re-entrant edges.

3. A heating unit as claimed in claim 1, in which said track elements are slotted open tubes.

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