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HEAT EXCHANGER CORE SHIELD

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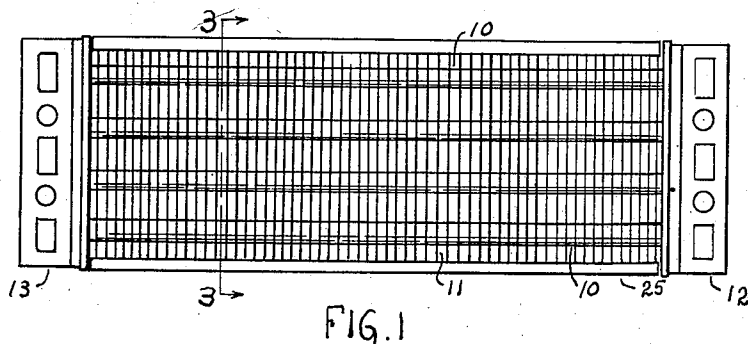


FIG. 1

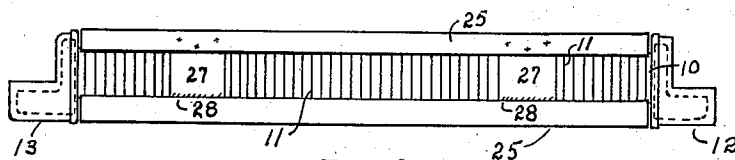


FIG. 2

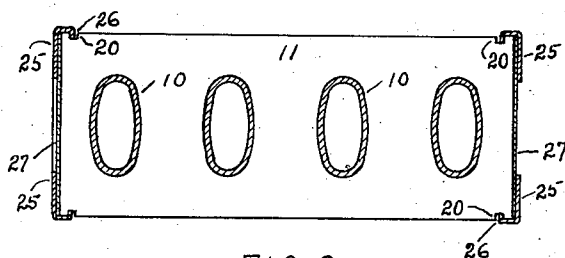


FIG. 3

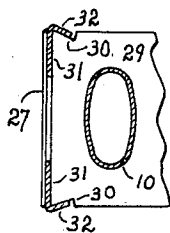


FIG. 4

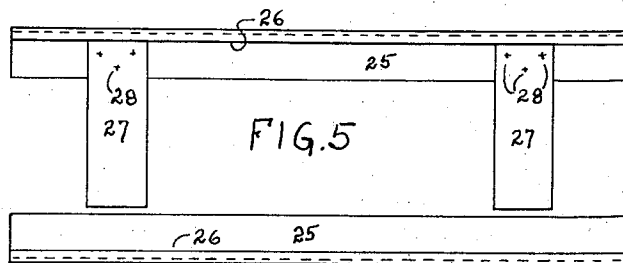


FIG. 5

FIG. 6

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HEAT EXCHANGER CORE SHIELD

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2 Claims. (Cl. 257—124)

The present invention relates to heat exchanger cores having a number of tubes and a multiplicity of fins of a type wherein it is desirable to protect their ends and corners from injury.

Modern core fins are very thin and fragile, and are easily bent out of position. Therefore, it is desirable to shield their corners and ends.

An object of the present invention is to provide a shield which is light, simple, easily manufactured and easily assembled on the core.

A further object of the present invention is to provide a shield which will improve the appearance of the core at a nominal cost and adequately protect the core.

To these and other useful ends my invention consists of parts, combinations of parts or their equivalents as hereinafter described and claimed and shown in the accompanying drawing in which:

Fig. 1 is a rear view of a complete core suitable for sectional heaters and equipped with my invention.

Fig. 2 is a side view of the device as shown in Figure 1.

Fig. 3 is a transverse sectional view taken on line 3—3 of Figure 1.

Fig. 4 is a fractional view of a modification.

Fig. 5 is a plan view of a fraction of my improved device.

Fig. 6 is a plan view of the other fraction of the device as used to complete the shield for one side of the core.

As thus illustrated, numeral 10 designates the tubes of the core, numeral 11 designates the fins of the core through which the tubes extend as illustrated. It is customary to flange the openings in the fins (not shown) forming a means for adequately bonding the fins to the tubes.

Various kinds of headers are used on cores of the class. I illustrate, for convenience, headers which are adapted for use on sectional heat exchangers. These headers are designated by numerals 12 and 13 each having two openings for the reception of holding bolts and outlet and inlet ports. Thus I have shown a complete core section designed for a specific purpose. When the cores are intended for other purposes, different types of headers are used. The headers shown are therefore not involved in this invention.

I provide cut-away portions 20 in the side edges of the fins and near the ends thereof, thus channels are formed for the length of the core. I provide L-shaped members 25 on which are formed flanges 26. Members 25 are held in pairs

in the position shown in Figures 1, 2 and 3 by means of strips 27—27. These strips are preferably spot welded to one of the members 25 as at 28 as illustrated in Figure 5 and after the pair has been assembled on the core, and held tightly into position, the other ends of members 27 are bonded to the other member 25 as at 28.

In Figure 4 I illustrate a modification wherein the fins 29 are cut-away as at 30 and members 31 are formed as at 32 so as to fit into members 30 as illustrated. Members 31 are secured to the core as already explained in connection with Figures 5 and 6.

In Figure 4 depressions 30 may be made somewhat wider than required whereby when the two halves of the shields are pressed together plates 27 or the shields will be drawn tightly against the ends of the fins.

One of the advantages of my device is that the shields consist primarily of two parts which are secured together after they are assembled on the core, thus before they are secured together; pressure may be used to cause them to tightly hug the faces of the core.

It will be understood that I may elect to position strips 27 on the outside of members 25 and 31 (see Figure 4) thus the shields will contact the ends of the fins instead of plates 27.

It will be understood that I may elect to spot weld one only of members 27 to each of members 25, however, it appears desirable to assemble the members as illustrated in Figure 5 making it more convenient to solder or otherwise secure the assembly on the core.

It will also be understood that members 25 may be held together in some other manner than by means of members 27. Cut-away portions 20 and 30 may be formed into the fins without removing material. Clearly many other minor detail changes may be made without departing from the spirit and scope of the present invention as recited in the appended claims.

Having thus shown and described my invention, I claim:

1. A device of the class described, comprising a number of tubes and a multiplicity of closely spaced rectangular in shape fins through which said tubes extend forming a core, depressions cut in the opposite long edges of said fins near the corners thereof forming channels in the core, unequal flange angle bars positioned over the corners of said core, the narrow flanges having inturned edges adapted to fit into the adjacent channels, means between adjacent angle irons

adapted to firmly hold said flanges in said channels.

2. A device of the class described, comprising a number of tubes and a multiplicity of closely spaced rectangular in shape fins through which said tubes extend forming a core, said fins having depressions in their opposite long edges near the

corners thereof forming channels in the core, a pair of plates positioned on the narrow sides of said core each having narrow flanges adapted to extend into the adjacent channel, means between said plates adapted to firmly hold their flanges into said channels.

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