Aug. 8, 1939. F. M. YOUNG 2,168,549

CORE FIN BINDER STRIP

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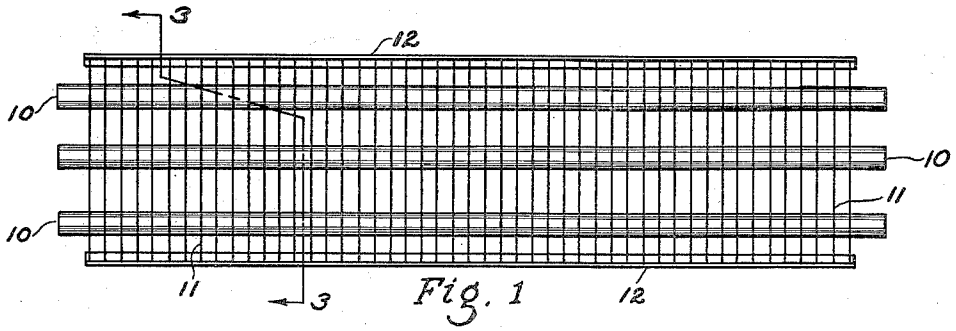


Fig. 1

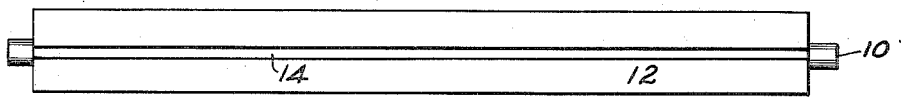


Fig. 2

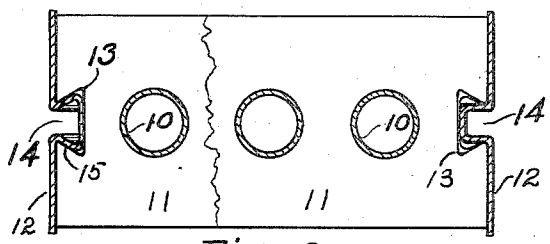


Fig. 3

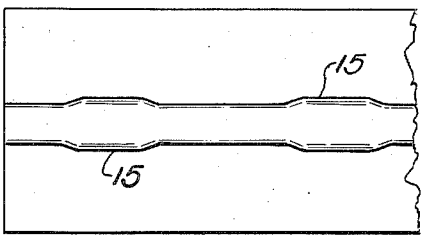


Fig. 4

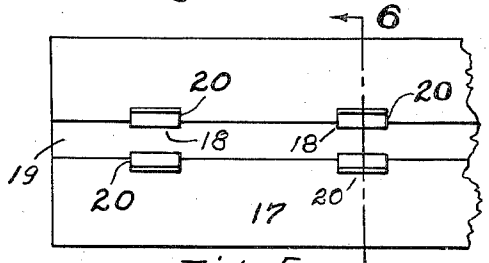


Fig. 5

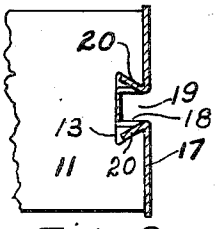


Fig. 6

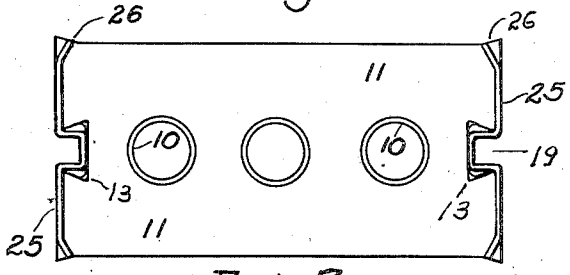


Fig. 7

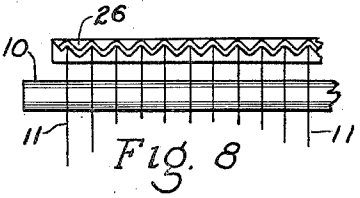


Fig. 8

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CORE FIN BINDER STRIP

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Application May 28, 1937, Serial No. 145,181

4 Claims. (Cl. 257—124)

The present invention relates principally to certain types of radiator cores comprising tubes and a multiplicity of fins through which the tubes extend and the principle object being to provide novel means for protecting the fins by means of a suitable plate which is secured to the ends of the fins in a new and novel manner.

Modern radiator fins are very thin and delicate. It is therefore impossible to assemble the cores, secure the headers to the cores and move them about the factory without distorting the end edges of the fins.

I provide a plate as a covering for the narrow edges of the fins and secure the plate to the fins. I also provide means whereby after this plate has been secured to the fins, the fins at their corners will be held in spaced relation, the plate having a further purpose in that it cooperates with the headers to provide an air channel.

The present invention also includes a new and novel method for moving the fin corners into spaced relation and holding them in this position while the protecting strip is being secured into position.

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

Fig. 1 is a front view of a radiator core less the headers and being equipped with my invention.

Fig. 2 is a side view of the core as illustrated in Figure 1.

Fig. 3 is an enlarged transverse section of the core illustrated in Figures 1 and 2, taken on lines 3—3 of Figure 1.

Fig. 4 is a fractional enlarged side view of the protecting strip viewed from the fin side.

Fig. 5 is an enlarged fractional side view of a modification.

Fig. 6 is a section taken on line 6—6 of Figure 5, showing a fraction of a fin.

Fig. 7 is an end view of the device illustrating a modification.

Fig. 8 is an enlarged fractional side view of the modification shown in Figure 7.

As thus illustrated, numeral 10 designates the tubes of a radiator core which may be round, oblong or any other desirable shape in cross section. Numeral 11 designates the fin strips through which the tubes extend. These strips are closely spaced and having preferably flanged openings through which the tubes extend, forming a suitable connection for bonding the fins to the tubes. Numeral 12 designates my improved binding strip. Each fin at its ends is provided with cut-under portions 13 as clearly indicated in Figures 3 and 6; thus when the fins are assembled on the tubes, members 13 will form a trench across the narrow sides of the core for its length. Each binding plate 12, has pressed therein a channel 14 forming a rib on the opposite side of the plate which is adapted to fit into member 13. Thus it will be seen that the binder strip will lie against the narrow edges of the fins and that the outer edges of member 13 will embrace the rib formed by channel 14 as illustrated on the right side of Figure 3.

I provide means for locking this binder strip to the fins in the following manner:

A special manual or power operated device is provided with prongs which, when placed into channel 14 and caused to move apart, the stock will be stretched as at 15 for the width of two or three fins so as to hug the tapered sides of cut-away portions 13, thus to bind strip 12 snugly against the ends of the fins as illustrated on the left of Figure 3. Members 15 may be spaced any desired distance apart.

Referring now to Figures 5 and 6 wherein the portions to be forced against the angle sides of members 13 are cut free from plate 17 as at 18. This cutting operation is done before channel 19 is pressed into the strip and the cut is made so when the strip is finally formed as shown in Figure 6, there is left a narrow member 20 being free on three sides. This member 20 is then bent into position as previously described and as clearly indicated in Figure 6. Each member 20 is made long enough to contact 3, 4 or more fins and they may be spaced apart any desirable distance.

Thus it will be seen that after strips 12 and 17 have been locked against the fins that the edges and corners of the fins will be protected from injury. In the modification shown in Figures 7 and 8, I provide binder strips 25 having serrations 26 along each edge which are spaced exactly the same distance as the fins. Thus the corners of the fins will not only be protected from serious injury but will also be held in spaced alignment one with the other as clearly illustrated in Figure 8.

Clearly many minor changes may be made without departing from the spirit and scope of my invention as recited in the appended claims. For example, I may elect to form trenches 14 having a continuous shape as illustrated in section on the left side of Figure 3 wherein strip

12 would be placed on the core drawer-like; this design, however, would be suitable only for the strips shown in Figures 1 to 6. I may also extend the corrugations a considerable distance from the edges or they may be extended across the full width of the plate and other means than the trench and channel used for holding the strip into position.

Having thus shown and described my invention I claim:

1. A device of the class described, comprising a number of tubes being positioned in one or more rows, a multiplicity of closely spaced fins secured to said tubes forming a core, said fins having on their narrow edges under-cut portions forming trenches, plates adapted to cover said trenched edges and having formed projections adapted to be embraced by the sides of said trenches.

2. A device of the class described, comprising a number of tubes being positioned in one or more rows, a multiplicity of closely spaced fins secured to said tubes forming a core, said fins having on their narrow edges under-cut portions forming trenches, plates adapted to cover said trenched edges and having formed projections adapted to be embraced by the narrow edges of said trenches, the sides of said projections having at spaced intervals portions which contact the sides of said trenches.

3. A device of the class described, comprising a number of tubes being positioned in one or more rows, a multiplicity of closely spaced fins through which said tubes extend forming a core, said fins having on their ends cut-away portions forming trenches, plates adapted to cover the trenched ends of said fins and having formed projections adapted to be embraced by said trenches, means on the side edges of said plates adapted to extend between the corners of said fins to thereby hold the fins in spaced relation.

4. A device of the class described, comprising a number of tubes being positioned in one or more rows, a multiplicity of closely spaced fins through which said tubes extend forming a core, plates adapted to cover the entire narrow sides of said core formed by the ends of said fins and means adapted to hold said plates securely thereto, said plates being corrugated at their top and bottom edges the corrugations being adapted to extend between the corners of said fins to thereby hold the fin corners in spaced relation.

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