

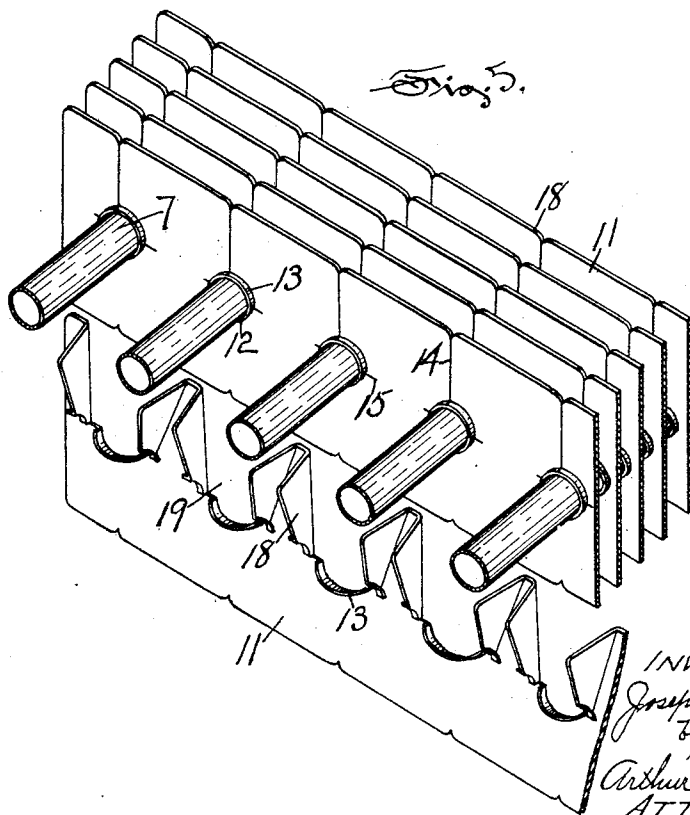
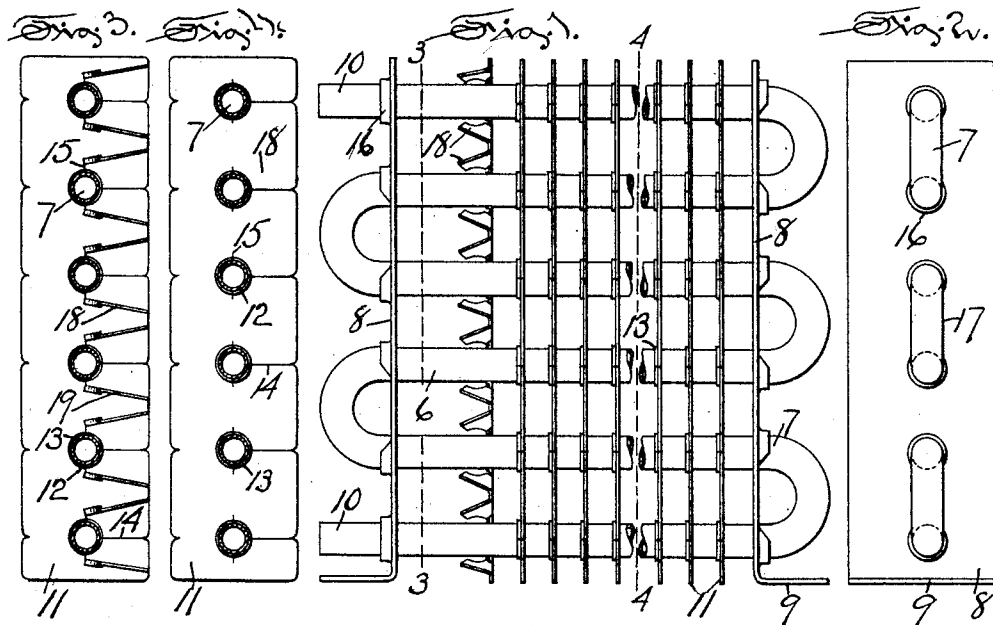
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METHOD OF MAKING RADIATORS

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METHOD OF MAKING RADIATORS

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My invention relates to that class of radiators which are employed for transference of heat from or to fluid traversing tubes, commonly in the form of coils, and an object of the invention, among others, is the production of a radiator of this type that shall be extremely simple in connections and particularly efficient in operation.

One form of a radiator embodying my invention and in the construction and use of which the objects herein set out, as well as others, may be attained, is illustrated in the accompanying drawing, in which—

Figure 1 is a view in side elevation of my improved radiator with the center broken out and with one conducting plate arranged to show the method of assembling the parts.

Figure 2 is an end view.

Figure 3 is a view in cross section on a plane denoted by the dotted line 3—3 of Figure 1.

Figure 4 is a similar view on a plane denoted by the dotted line 4—4 of Figure 1.

Figure 5 is an isometric perspective view of a fragment of the radiator illustrating the manner of assembling the radiating plates or fins.

In the accompanying drawing the numeral 6 denotes a conductor for fluid from or to which heat is to be transferred, this conductor being shown in the form of a coil 7 supported in a frame comprising end plates 8, in a manner common to structures of this class and which will, therefore, be readily understood by those skilled in the art without further explanation. Said plates may have outturned feet 9 affording a means of support. The ends 10 of the coils are adapted for connection to any suitable means for supply and delivery of the fluid traversing the coils.

This invention resides mainly in the manner of constructing the radiating fins or plates and in assembling them upon the tubes. These radiating plates 11 have holes 12 to receive the branches of the coils, these holes being created with small flanges 13, and cuts 14 are made in the plates extending from one edge thereof into said holes. Bend locating cuts 15 are extended from diametrically opposite sides of the holes 12 through and to a short distance beyond the flanges 13, as shown in Figures 3 and 4 of the drawing. The end plates 8 may be provided with supporting flanges 16 for the coils if desired.

In assembling the parts constituting the radiator the tubes being bent into the form of coils the latter are passed through openings 17 in the form of slots in the end plates 8, and said plates

are secured in place as by means of soldering or otherwise.

The arrangement of the holes 12 and the cuts 14 create wings or flaps 18 on opposite sides of the cuts, as shown in Figures 1 and 3, and for assembling purposes these flaps are bent outwardly providing openings 19. All of the flaps having been bent outwardly upon one or more of the radiator plates the coils may be laid into the openings or gaps, thus created, as shown in Figures 1 and 5 of the drawing, after which the wings or flaps are bent inwardly to their former position to close the openings 19. In bending the parts outwardly as just described use is made of the slots 15 which act to establish bending lines for the wings or flaps, the inner ends of the bending lines terminating at the ends of the slots or cuts 15 and, therefore, outside of the flanges 13 through which the slots cut. By this means of establishing the bending line distortion of the wings or flaps is prevented and they may be bent back into the original positions and will assume their former flat shape, as shown in Figure 5. Without thus establishing the bending line, when the wings are bent outwardly, it is found that they buckle and become distorted, and when bent back into their original position will not assume their former flat position.

In accordance with the provisions of the patent statutes I have described the principles of operation of my invention, together with the device which I now consider to represent the best embodiment thereof; but I desire to have it understood that the device shown is only illustrative and that the invention may be carried out by other means and applied to uses other than those above set out.

I claim:

1. The method of forming a radiator that consists in making a hole in a radiating fin, extending a cut into said hole from the edge of the fin, extending short cuts out of said hole laterally of the direction of the first cut, thereby creating wings on opposite sides of said cut, bending the wings outwardly to create a gap from the edge of said fin into said hole, then inserting a conducting tube from the outer edge of said fin and laterally thereof through said gap into said hole, said gap being of a width substantially equal to the diameter of said tube and then bending the wings back into their original positions.

2. The method of forming a radiator that consists in making a series of holes in a radiating fin, extending a cut into each of said holes from one edge of said fin, extending short cuts from

opposite sides of each of said holes laterally of the direction of the first cut, thereby creating wings on the opposite sides of each of said first cuts, bending the wings outwardly to create gaps from the edge of said fin into said holes, then inserting the several branches of a coil simultaneously through said gaps into said holes, and then bending the wings back to their original positions.

3. The method of forming a radiator that consists in making a hole in a radiating fin, forming a flange around said hole, extending a cut into said hole from the edge of the fin, extending short bend locating cuts from opposite edges of said hole laterally of the direction of the first cut and through said flange, thereby creating wings on opposite sides of said first cut, bending the wings outwardly to create a gap from the edge of said fin into said hole, then inserting a

conducting tube laterally through said gap into said hole, and then bending the wings back into their original positions.

4. The method of forming a radiator that consists in making a series of holes in a radiating fin, forming flanges around said holes, extending cuts into said holes from the edges of the fin, extending a short bend locating cut from opposite sides of each of said holes laterally to the direction of the first cut thereto and through said flange, thereby creating wings on opposite sides of said first cut, bending the wings on opposite sides of each of said first cuts outwardly to create a gap from the edge of said fin into one of said holes, then simultaneously inserting the several branches of a coil laterally through said gaps into said holes, and then bending the wings back into their original positions.

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