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2,117,830

PROCESS FOR MAKING HEAT EXCHANGERS AND THE LIKE

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FIG:1

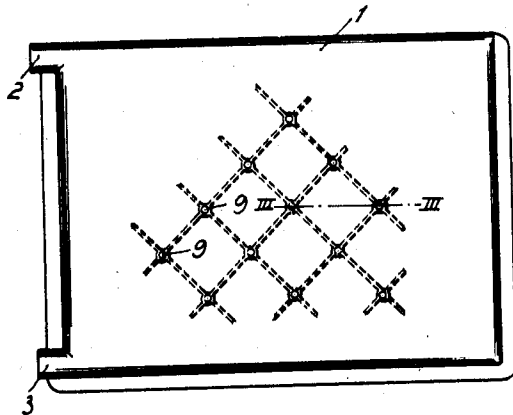


FIG:2



FIG:3

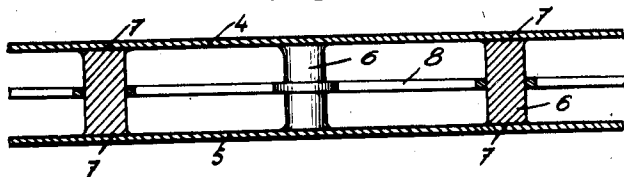
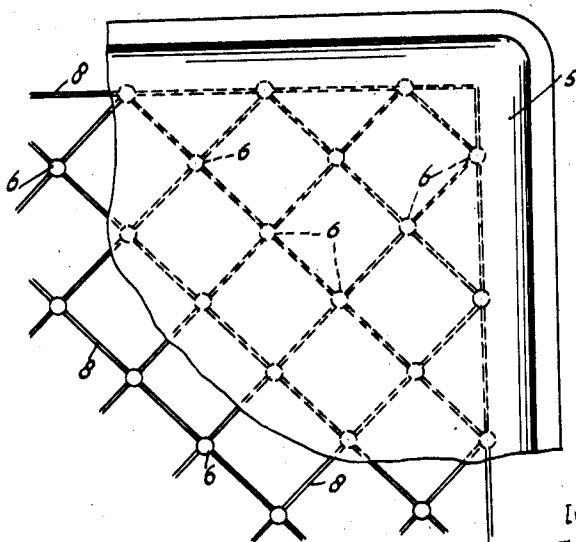


FIG:4



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PROCESS FOR MAKING HEAT EXCHANGERS
AND THE LIKE

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2 Claims. (Cl. 29—157.3)

Ordinarily heating radiators are composed of cast elements which comprise a system of tubes or simply a single piece. There are, however, radiators also known which are formed of metal plates, fitted at a distance from each other and of which the edges are connected together or of which one of the edges is bent over. The walls of these radiators are kept at the required distance one from the other by means of rivets which pass through holes in the walls and through tubular pieces located between the walls. Nevertheless, these rivets do not always form a sufficiently tight joint, so that leakages take place around them.

According to the invention, the radiators also consist of parallel metal plates which are fitted at a certain distance from each other. But in this case, the walls of the radiator elements are kept at the required distance one from the other by small metal bars or bodies of any desired shape which are located between the walls and are attached to the plates by welding.

It has been found in particular that the small assembly bars can be easily attached to the two walls by welding. The welded points are then perfectly tight, so that leakages can no longer take place. In order to be able to easily arrange the small distance bars at the desired position between the walls of a radiator element, according to the invention these small bars can be arranged in a metal plate, a perforated metal plate, metal fabric or a similar material, in such manner that when this material is placed with the small bars, between the two walls of the radiator element, these small spacing bars occupy the desired position and can then be easily fixed to the walls by welding.

The invention will now be explained more in detail with reference to the annexed drawing.

Figure 1 is a side view of a radiator element according to the invention.

Figure 2 is an end view of Fig. 1.

Figure 3 is a section through a portion of a radiator element taken on line III—III in Fig. 1 in enlarged fragmentary form, two small spacing bars being shown in section, and

Figure 4 is a view of a portion of a lateral plate on which is placed a metallic trellis-work, in which are located the small spacing bars.

The radiator element is provided in the usual manner with an inlet 2 and an outlet 3. As appears from Fig. 3, the lateral plates 4 and 5 are attached together by means of small spacing bars 6. The welding points are indicated by 7.

In order to arrange the small spacing bars at the correct point between the lateral walls of the radiator element, the small bars 6 may be ar-

ranged in holes 9 in a trellis-work 8, as shown in Fig. 4. The small bars may be easily attached to the side plates by electric welding. The radiator elements according to the invention are manufactured in a very simple manner, and for this reason can be supplied at a low price. The elements may be made quite flat, so that they only take up a small space. Obviously, the mentioned trellis-work or the equivalent and the small bars or spacers 6 should be first inserted between the side plates 4 and 5 before they are fully bent together, and the latter only forced together so that their edges meet after such introduction of the mentioned spacers, and the bars or spacers then welded to said side plates.

Having now fully described my invention, I claim:

1. The process for manufacturing hollow heat exchangers, radiators and the like, which in a combined group of steps, consists in placing a plurality of cylindrical spacer elements of small cross section in a flat trellis structure to locate said spacer elements in an equidistantly spaced relationship, forming a pair of plates having flanged meeting edges serving to provide a space between said plates when said plates are assembled, said plates being also formed with inlet and outlet ports, placing the assembled trellis structure and spacer elements between said plates, welding said meeting edges of the plates, and spot welding the plates to the ends of each of said spacer elements, said trellis structure remaining in situ suspended upon the spacer elements parallel with and between the spaced portions of said plates.

2. The process for manufacturing hollow heat exchangers, radiators and the like, which in a combined group of steps, consists in placing a plurality of cylindrical spacer elements of small cross section in a flat trellis structure to locate said spacer elements in an equidistantly spaced relationship, bending a plate double and forming the same to provide a pair of plate members having flanged meeting edges serving to provide a space between said plate members when said plate members are in fully assembled relation, said plate members being also formed with inlet and outlet ports, placing the assembled trellis structure and spacer elements between said plate members, welding said meeting edges of the plate members and spot welding the plate members to the ends of each of said spacer elements, said trellis structure remaining in situ suspended upon the spacer elements parallel with and between the spaced portions of said plate members.

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