

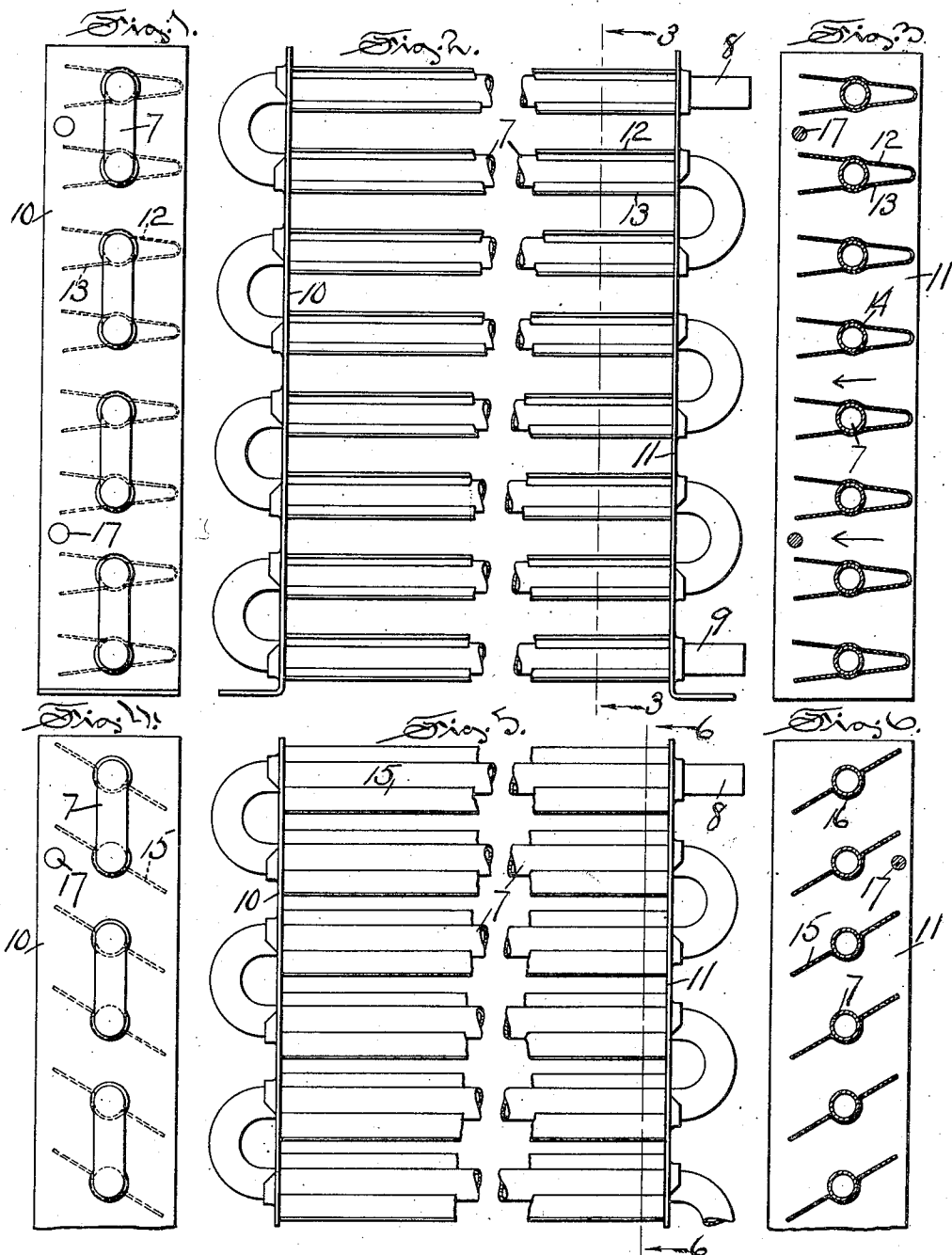
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H. C. KROMAS

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RADIATOR

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INVENTOR
Harry C. Kromas
by
Arthur E. Jenkins,
ATTORNEY

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RADIATOR

Harry C. Kromas, Hartford, Conn., assignor to
The Bush Manufacturing Company, Hartford,
Conn., a corporation of Connecticut

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3 Claims. (Cl. 257-262)

My invention relates to that class of devices which are employed in the transference of heat from or to a fluid flowing through a conducting tube, and an object of my invention, among others, is to create a radiator of this type that all be simple in construction 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 an end view of my improved radiator.

Figure 2 is a view in front elevation with the central parts broken away.

Figure 3 is a view in section on a plane denoted by the dotted line 3-3 of Fig. 2.

Figure 4 is an end view showing a modified form of apparatus embodying the invention.

Figure 5 is a view similar to Fig. 2 of this last mentioned device.

Figure 6 is a view in section on a plane denoted by the dotted line 6-6 of Fig. 5.

This invention embodies that type of a radiator comprising coils for the circulation of a fluid for the purpose of transferring heat and while it is particularly applicable for refrigerating purposes it will be understood that it is not necessarily limited to such.

In the accompanying drawing the numeral 7 denotes a tube or tubes in the form of a coil or coils and which is employed for the purpose of conducting a fluid from one point to another, the fluid as it flows through the coil either collecting heat from the surrounding atmosphere or transferring heat thereto, depending upon the particular use for which the apparatus is designed. Ends 8 and 9 are suitably connected to sources of supply and delivery in a manner that will be thoroughly understood by those skilled in the art and for which reason a showing of such is omitted herein. The coils are commonly supported in a frame comprising end plates 10 and 11 in any suitable manner.

In the use of apparatus of this kind it has been common practice to attach radiating elements as fins or plates to the coils, arranging such fins at slight distances apart along the coils and at right angles to the axis thereof, said fins having holes through which the coils extend and which serve as a means for attaching the fins to the coils as by soldering or otherwise. It is a purpose of the present invention to increase the efficiency of these radiating elements by constructing them

in such manner that a maximum amount of the fins may be in contact with the coils to produce increased radiating effects, and also in so disposing the fins that increased efficiency in their action may be produced. In effecting this purpose the fins, in one form of the invention, are of V-shape comprising branches 12-13 projecting across the coils and disposed with their planes extending lengthwise of the coils, as shown in Fig. 2. These fins or plates are preferably arranged in inclined positions relatively to the general direction of flow of air between the tubes, as indicated by the arrows in Fig. 3 of the drawing. The effect of this arrangement is to deflect the air currents from the general direction of flow between the coils or tubes and cause such currents to impinge against the fins and thereby increase the conductivity of such fins and consequently the rate of transference of heat.

As hereinbefore remarked the coils extend between the branches of the fins, and in order to obtain a maximum amount of contact between such coils and the fins the latter are provided with recesses 14 on their inner surfaces, in the preferred form of construction the fins being bent to shape as shown in Fig. 3 to create such recesses. These recesses envelop the coils to a considerable extent and a maximum area of contact is therefore obtained between the fins and the coils. If desired the fins may be secured as by soldering or otherwise. In that form of the structure shown in Figs. 4 to 6 the coils or tubes 7 are arranged substantially as hereinbefore explained between fins. The fins are arranged diagonally to the direction of flow of air currents but instead of being of V-shape, as shown in Fig. 3, these fins constitute substantially one-half of the structures shown in Fig. 3, as if the upper part of each of the fins shown in Fig. 3 were omitted. In this arrangement of the fins the recesses 16 envelop the tubes or coils to a somewhat greater extent than in the other form of the structure and they may be inclined to a greater degree if desired. In both forms of structure, however, the fins preferably extend for the whole length of the coils between the plates 10-11. The end plates 11 may be connected as by means of rods 17, such rods, however, being omitted from the showing in Figs. 2 and 5 in order not to obstruct the view.

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. A radiator comprising a tube having a fin of V-shape in cross section extending longitudinally of said tube, each branch or leg of said fin being recessed longitudinally intermediate its free edge and the apex to engage opposed wall portions of said tube.

2. A radiator comprising a series of tubes, and a fin of V-shape in cross section extending longitudinally of each of said tubes, each branch or

leg of said fin being recessed longitudinally intermediate its free edge and the apex to engage opposed wall portions of each of said tubes.

3. A radiator comprising a series of tubes, and a series of fins each of V-shape in cross section extending longitudinally of each of the tubes with all of the similarly positioned sides of the different fins arranged in parallel relation at an angle to the direction of intended flow of air relative to said tubes, each branch or leg of said fin being recessed longitudinally intermediate its free edge and the apex to engage opposed wall portions of each of said tubes.

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