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C. MUHLEISEN

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FIN TUBE

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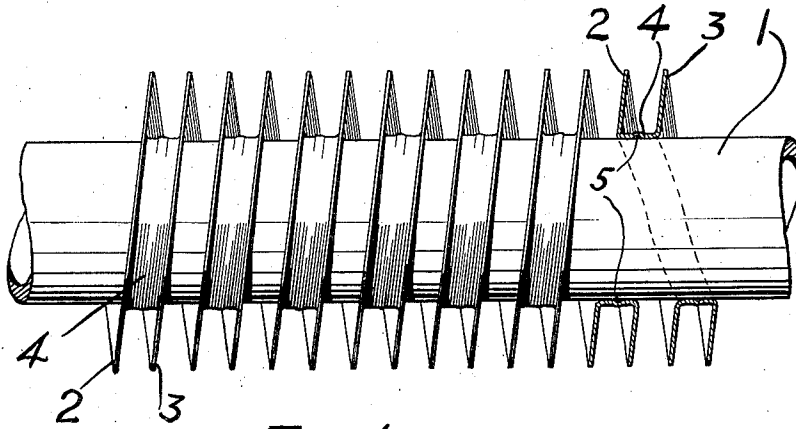


FIG. 1.

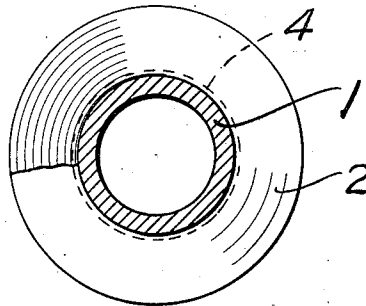


FIG. 2.

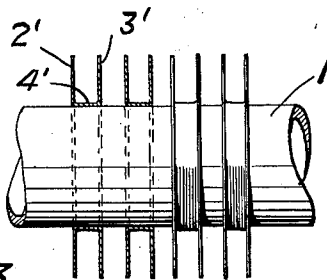


FIG. 3.

INVENTOR

WITNESS:

*Robert R. Mitchell*

*Carl Muhleisen*  
BY  
*Augustus B. S. Boughton*  
ATTORNEY.

## UNITED STATES PATENT OFFICE

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## FIN TUBE

Carl Muhleisen, Philadelphia, Pa., assignor to  
Schutte & Koerting Company, Philadelphia,  
Pa., a corporation of Pennsylvania

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## 1 Claim. (Cl. 257—262)

The principal objects of the present invention are to provide a good bond between the fins and the tubes; to provide a construction which can be rapidly made and assembled to increase the exterior radiating surface, and to insure improved contact of the fluid with the surface of the device.

Other objects of the invention will appear from the following description at the end of which the invention will be claimed.

The invention comprises the improvements to be presently described and finally claimed.

In the following description reference will be made to the accompanying drawing forming part hereof and in which,

Figure 1 is an elevational view of a portion of a fin tube with parts broken away showing features of the invention.

Figure 2 is a transverse sectional view of the same; and

Figure 3 is a view similar to Figure 1 illustrating a modification.

Referring to the drawing, 1 indicates a tube. There is a strip of sheet metal of channel section and it includes two side walls 2 and 3 and a bottom wall 4 and it is of spiral form. The two side walls are spaced apart throughout adjacent turns of the spiral. In this case reference is made to the side walls which are not connected by a bottom wall. The bottom wall conforms to the surface of the tube and it is provided with a groove 5 extending parallel to the side walls and being adjacent to the surface of the tube. The whole structure is tinned for the purpose of uniting or bonding the parts.

It is evident that two fins connected by the bottom wall are applied to the tubes at a single winding operation and since the spirals are spaced the pitch is steep. The first of the two facts referred to results in rapid production and therefore in economy, and the second fact means that contact with the fluid is improved because air blowing past the tube is deflected and stirred

up by reason of the comparatively steep inclination of the fins in respect to its direction of travel. The bottom wall in connection with the tin which enters between it and the tube provides a good bond at comparatively little expense. The groove 5 improves this bond. The bottom wall of the channel section increases the diameter and therefore the surface of the tube to the extent of the thickness of the strip and in the case of long tubes there is in that way some increase in the area of the surface which is an advantage in the transfer of heat or cold.

The construction and mode of operation of the modification shown in Figure 3 are as above described except that the channel section is not of spiral form but is in the form of individual rings which are strung on the tube 1 in spaced relation, and the spaced relation may be maintained by the snugness of the fit between the outside surface of the tube and the inside and the confronting surfaces of the bottom wall of the rings until the structure has been tinned or otherwise similarly treated with a metal coating. In Figure 3 the parts are designated by the same numbers plus the exponent 1.

It will be obvious to those skilled in the art to which the invention relates that modifications may be made in details of construction and arrangement and in matters of mere form without departing from the spirit of the invention which is not limited in respect to such matters or otherwise than as the prior art and the appended claim may require.

I claim:

A fin tube comprising in combination, a tube, a channel section having two side walls and a bottom wall and of spiral form, the two side walls of the adjacent turns of the spiral being spaced apart and the bottom wall conforming to the surface of the tube and provided with a groove, the whole being metal coated to unite the parts.

CARL MUHLEISEN.