Nov. 12, 1929. A. L. SWANK 1,735,807

RADIATOR REENFORCEMENT

Filed Sept. 15, 1924

Fig. 1.

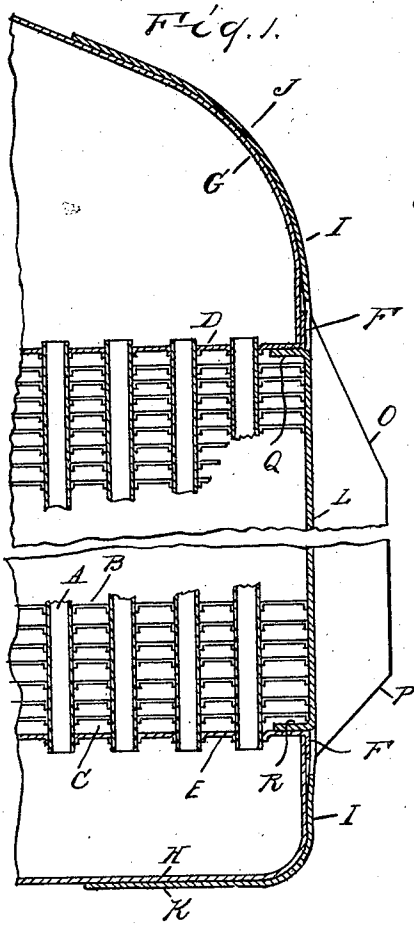


Fig. 2.

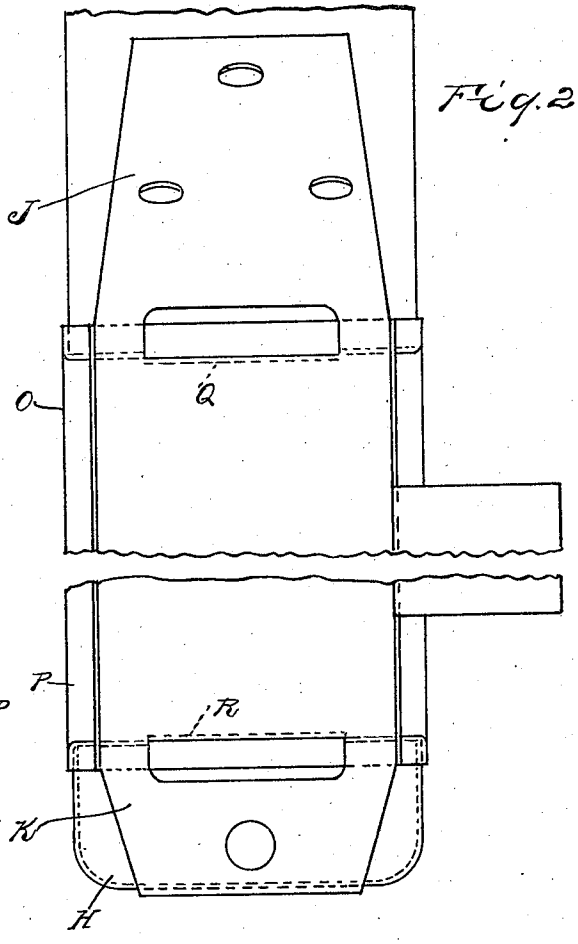
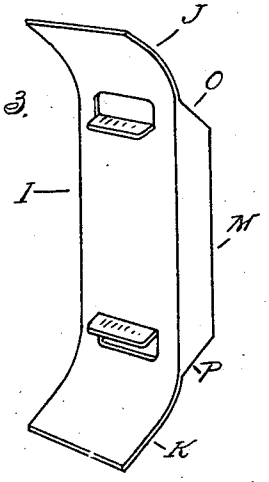


Fig. 3.



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UNITED STATES PATENT OFFICE

ARTHUR L. SWANK, OF DETROIT, MICHIGAN, ASSIGNOR TO LONG MANUFACTURING COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN

RADIATOR REENFORCEMENT

Application filed September 15, 1924. Serial No. 737,792.

The invention relates to the construction of radiator cores and has for its object the reenforcement and mechanical strengthening of the structure and particularly the connection between the upper and lower tanks. To this end the invention consists in the construction as hereinafter set forth.

While my improvements are applicable to various types of radiator core construction, I shall specifically describe its application to the fin and tube type, in which a series of vertically extending tubes have a series of laterally extending fins sleeved thereon and soldered thereto, the upper and lower water tanks being formed by header plates secured to the tubes in the same manner as the fins and having the tank bodies soldered to said header plates. Such construction is mechanically weak and it is one of the objects of the present invention to reenforce the same.

In the drawings:

Figure 1 is a cross section through a portion of radiator to which my improvements are applied;

Figure 2 is an end elevation;

Figure 3 is a perspective view of the reenforcement strip.

As shown, the radiator is formed of a series of vertical tubes A and a series of laterally extending fins B spaced to form the intermediate air cells C and soldered upon the tubes. D and E are respectively the top and bottom header plates, which are similar to the fins but formed of heavier gauged metal, being also provided with the marginal flanges F for attachment to the tank bodies G and H.

My improved reenforcement comprises a metallic strip I, preferably of heavier gauged metal than that used in the construction of other parts of the core. This strip is formed with an upper portion J which is curved to conform to the shape of the upper tank G, a lower portion K fashioned to fit around the lower tank H and an intermediate portion L extending between said tanks. This intermediate portion is of greater width and is bent to form the outwardly extending flanges M or a channel-shaped horizontal section. The flanges M are tapered off at their upper and lower ends, as indicated at O and P, but extend to slightly overlap the tanks G and H.

To further increase the reenforcement of the core the strip I is provided with struck-out portions Q and R, which extend inward to lie adjacent respectively to the upper and lower header plates D and E. These portions Q and R thus form angle flanges, which together with the portions J and K are soldered to the tanks. This forms a rigid connection, while the trussing effect of the intermediate portions L with the angle flanges M will impart rigidity to the whole structure.

It is obvious that the reenforcement just described can be easily formed and applied to the core without any other change in the structure.

What I claim as my invention is:

1. The combination with a radiator core including top and bottom tanks, of a reenforcement comprising a strip arranged at the side of the radiator having portions overlapping and secured to said tanks, and an inwardly extending angle flange bracing the horizontal wall of each of said tanks.

2. The combination with a radiator core including top and bottom tanks, of a reenforcement therefor comprising strips arranged at the sides of the radiator overlapping and secured to said tanks, and angle flanges projecting inward from said strip respectively secured to the bottom of the upper tank and top of the lower tank.

3. The combination with a radiator core including a tank, of a reenforcement therefor comprising a strip having a portion overlapping and secured to the side of said tank and provided with a struck-out portion lying in juxtaposition to the horizontal wall of said tank.

4. The combination with a radiator core including top and bottom tanks, of a reenforcement comprising a strip extending between said tanks and secured thereto, said strip also having a struck-out portion forming an angle flange lying adjacent and secured to a horizontal wall of one of said tanks.

5. The combination with a radiator core including top and bottom tanks, of a reenforcement comprising a metallic strip extending at the side of the radiator between

said top and bottom tanks, overlapping and secured to the same, the portion of said strip intermediate said tanks being outwardly flanged to form a channel section, and an angle flange projecting inward from said strip and secured to a horizontal wall of the tank.

6. The combination with a radiator core including top and bottom tanks, of a reenforcement therefor comprising a strip arranged at the side of the radiator, and means carried by the said strip for embracing the ends of the said tanks and for spacing the bottom of the upper tank from the top of the lower tank.

7. The combination with a radiator including upper and lower tanks, of a reenforcing member having portions embracing one of the said tanks and spacing the one tank from the other.

In testimony whereof I affix my signature.

ARTHUR L. SWANK.