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C. B. HIGGINS

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RADIATOR CORE

Filed Nov. 7, 1931

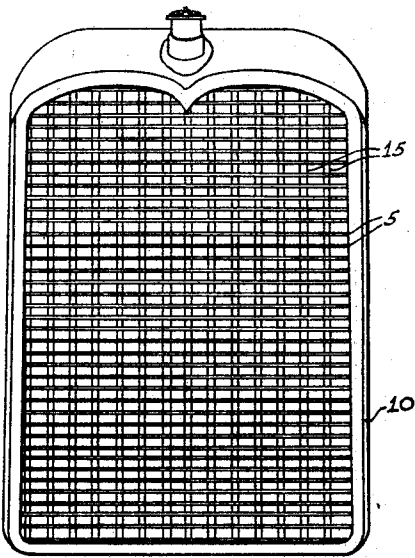


Fig. 1

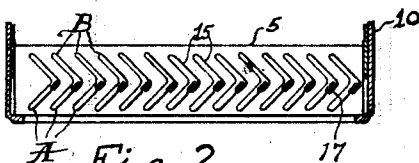


Fig. 2

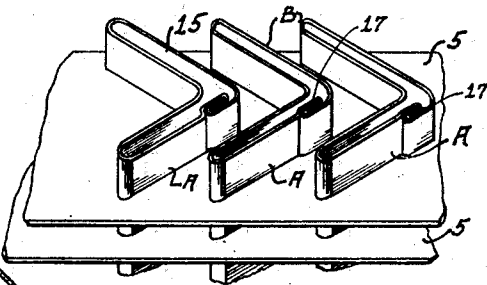


Fig. 3

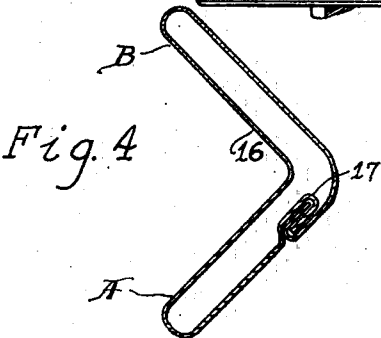


Fig. 4

INVENTOR

Clifford B. Higgins

BY

Barthel M. Barthel

ATTORNEYS

UNITED STATES PATENT OFFICE

CLIFFORD B. HIGGINS, OF DETROIT, MICHIGAN

RADIATOR CORE

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My invention relates to motor vehicle radiators and more particularly to a radiator core.

An object of the present invention is to provide a radiator core wherein the tubes thereof are angular in cross section so that they will possess a maximum capacity or transverse width and at the same time reduce the width or thickness of the core.

Further, the invention provides a radiator core embodying a plurality of parallel tubes which are substantially V-shaped in cross section and arranged with their apices at the longitudinal center of the fins to produce a multiplicity of sinuous air passages and baffles and thus produce a maximum cooling effect upon the air as it passes through the core.

It is another object of the invention to provide a radiator core structure wherein the V-shaped tubes effect a greater anchorage at the juncture of their ends with the tanks of the radiator. Such construction renders the tubes stronger, prevents the side walls of the latter from springing out of contact with the fins, generally increases the rigidity of the core in a lateral direction, and permits the tubes to be manufactured from thinner metal.

With the preceding and other objects and advantages in mind, the invention consists in the novel combination of elements, construction and arrangement of parts and operations to be hereinafter specifically referred to, claimed and illustrated in the accompanying drawing, wherein—

Figure 1 is a front elevation of a motor vehicle radiator constructed in accordance with my invention;

Fig. 2 is a transverse sectional view of the same;

Fig. 3 is a fragmentary perspective of the core; and

Fig. 4 is a transverse section of one of the tubes.

Referring to the invention in detail, a plurality of spaced horizontally extending parallel fins 5 of my improved core are mounted in the usual shell 10. The fins 5 are formed with spaced parallel V-shaped slots which are arranged with their apices at the longitudinal centers of the fins. These slots extend sub-

stantially the entire width of the fins and stop short of the longitudinal edges as shown.

A plurality of tubes 15 which are V-shaped in cross section, extend through the said slots or openings in said fins and are positioned with their apices at the longitudinal center of said fins, thus producing air passages which are substantially V-shaped in cross section between adjacent tubes. It will be seen that the forward leg A or angular side portion of each tube constitutes a baffle at the front side of the core while the rear leg B of each tube serve as a baffle at the rear side of the core. As the incoming air strikes the inclined sides or legs A, it is deflected against the legs B so that substantially the entire surface of all of the tubes will be contacted by the air as it passes rearwardly through the passageways defined by said tubes. It will also be seen that the air is not unduly retarded in its passage through the radiator, the arrangement of the tubes being such as to cause the air to be quickly discharged at the rear side of the core so that fresh cold air will be constantly flowing therethrough to effectually cool the tubes and consequently the water flowing through these tubes.

In the manufacture of the tubes each of them is formed from a single length of sheet metal 16 which is bent, as shown in Figure 4 and has its longitudinal edges interlocked by a seam joint 17.

In addition to the V-shaped in cross section tubes cooperating as above set forth to cool the air passing between the same, I am enabled to provide a radiator core having a maximum water capacity and cooling surface and a minimum core width. Furthermore, more secure anchorage is had at the juncture of the tubes with the top and bottom tanks of the radiator, this being due to the cross-sectional angularity of the tubes, and they are prevented from springing out of contact with the fins and the core is rendered more rigid laterally or cross sectionally.

What I claim is:—

A radiator core comprising a plurality of vertically extending flat tubes each formed from sheet metal with the longitudinal edges of the metal interlocked in a seam, each tube

bent along its longitudinal center to form tubular legs disposed in angular relation to each other in cross-section of said tube with said seam located adjacent said bend to give
5 maximum flow space in each of said legs, said tubes being set in said core in parallel spaced relation with said angularly disposed legs of each tube overlapping the apex of the angle of an adjacent tube, and a plurality of
10 spaced apart fin plates each formed of a single thickness of thin sheet metal with a plurality of slots conforming in shape to the cross-sectional shape of each of said tubes and through the aligned slots of which plates
15 said tubes extend vertically, said plates being spaced apart vertically of the radiator, a distance not greater than the distance between adjacent tubes.

20 In testimony whereof I affix my signature.
CLIFFORD B. HIGGINS.

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