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Patented

No. 855,374.

PATENTED MAY 28, 1907.

J. A. WILSON, JR.  
RADIATOR FOR AUTOMOBILES.  
APPLICATION FILED SEPT. 17, 1906.

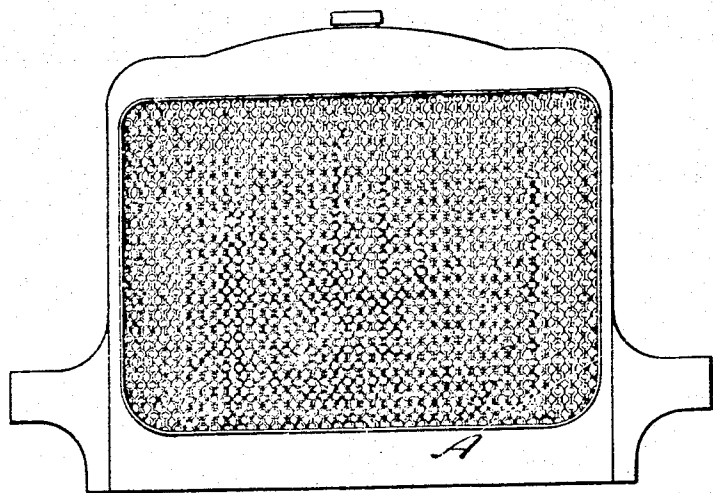


Fig. 1.

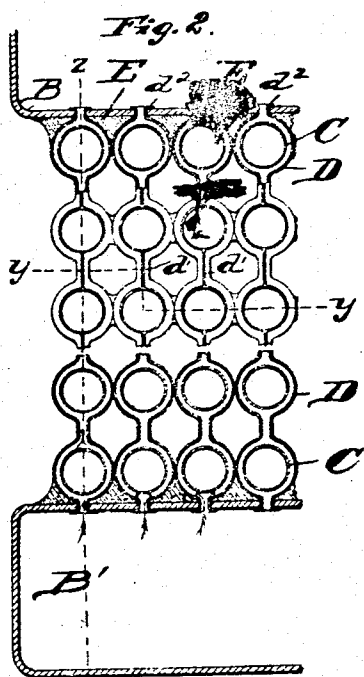


Fig. 2.

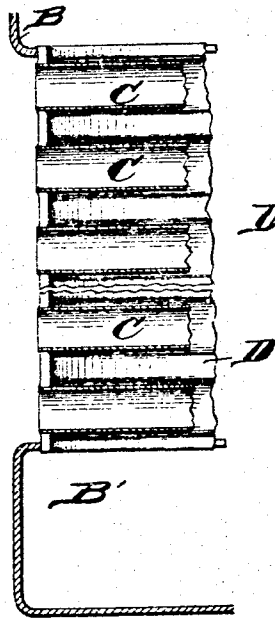


Fig. 3.

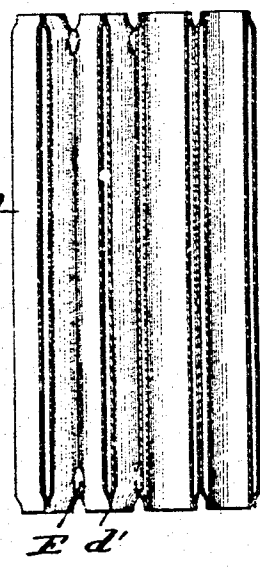


Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## RADIATOR FOR AUTOMOBILES.

No. 855,374.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed September 17, 1906. Serial No. 334,587.

*To all whom it may concern:*

Be it known that I, JOHN A. WILSON, JR., a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Radiators for Automobiles; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in radiators for automobiles, shown in the accompanying drawings, and more particularly set forth in the following specification and claims.

In the drawings: Figure 1 is a front elevation of an automobile radiator; Fig. 2 is a cross-sectional view of a detail of the same, showing parts in section; Fig. 3 is a sectional view on line  $z-z$  of Fig. 2. Fig. 4 is a sectional view on line  $y-y$  of Fig. 2.

The object of my invention is an improvement in the construction of what is known as the "cellular" type of radiators, and consists in constructing the radiator with seamless tubes jacketed in such a manner that the water in circulating is caused to divide over each tube, thereby agitating the water throughout its passage, by which means its temperature is materially reduced.

Referring to the letters of reference shown in the drawings, A indicates the radiator as a whole; B the upper, and B' the lower water chambers.

C are seamless copper tubes inclosed within a sheet metal jacket D. The jacket D is constructed of two parts flanged at their ends to form the end walls of the water chamber, at which point the jacket is soldered or brazed to the tubes C and also at the junction point  $d'$  where the sheets meet between each of the tubes.

To connect the rows of tubes to the upper and lower water chambers, the sheet metal

jacket after passing through the apertures provided in the walls of the water chamber is flanged over the walls, as indicated at  $d'$ . Solder E, is then run between the tubes and the wall of the water chamber, as indicated in Fig. 2, thereby securely anchoring the radiator-tubes to the walls of the water chambers.

The advantages gained by my improved construction will be readily understood;—the water in circulating will split over the tubes, as indicated by the arrows in Fig. 2, passing in either direction around each tube and coming together again between the next pair of tubes will again divide on reaching the adjacent tube, and so on. By this means, the water is constantly and thoroughly agitated while circulating around the pipes, thereby causing a material reduction of the temperature.

Having thus described my invention, what I claim is:—

1. In a cellular radiator for automobiles, a series of tubes, a jacket surrounding each of said tubes forming a water space around alining series of tubes, substantially as described.

2. A radiator comprising a series of tubes, and a series of communicating jackets surrounding the tubes, the jackets being flanged at their ends and secured to the corresponding tubes to form the end walls of the radiator.

3. A radiator comprising spaced water chambers, a series of tubes between the chambers, and a series of communicating jackets surrounding the tubes and communicating with said chambers.

4. A radiator comprising a plurality of tubes, and jackets surrounding the tubes in separate sets constructed and arranged to circulate water in a divided course with respect to the corresponding set of tubes.

In testimony whereof, I sign this specification in the presence of two witnesses.

JOHN A. WILSON, JR.

Witnesses:

S. E. THOMAS,  
HENRY E. VILLEROT.