July 3, 1923. 1,460,805

H. SWAY

RADIATOR CORE

Filed Sept. 22, 1920 2 Sheets-Sheet 1

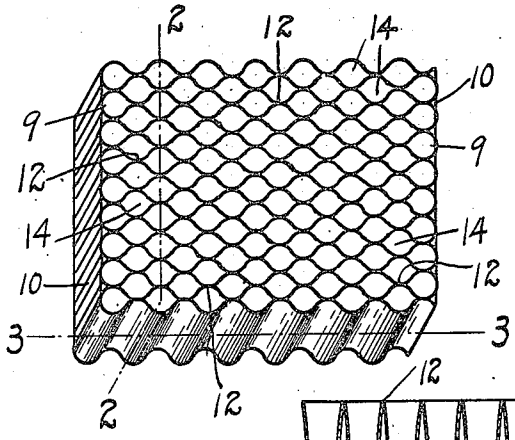


FIG. 1.

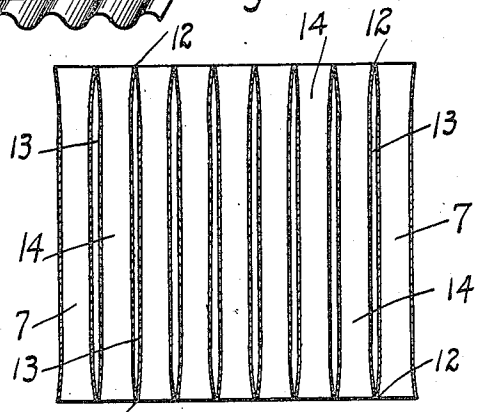


FIG. 2.

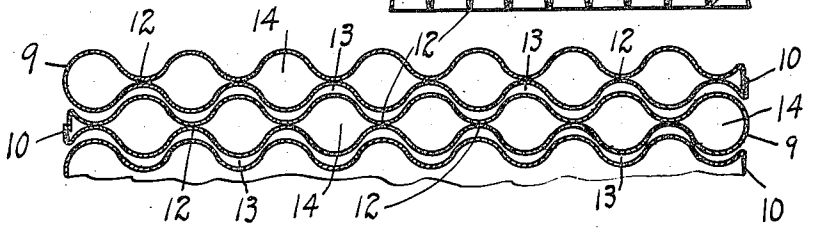


FIG. 3.

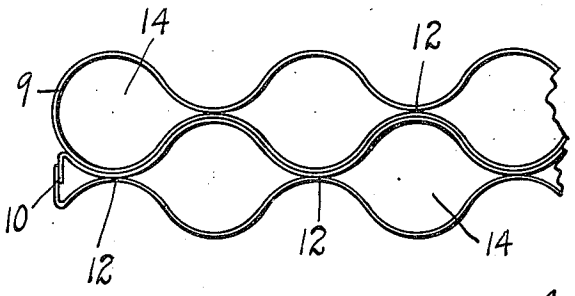


FIG. 4.

INVENTOR.
Henry Sway
By Johnson & Krehbiel
ATTORNEY.

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H. SWAY

RADIATOR CORE

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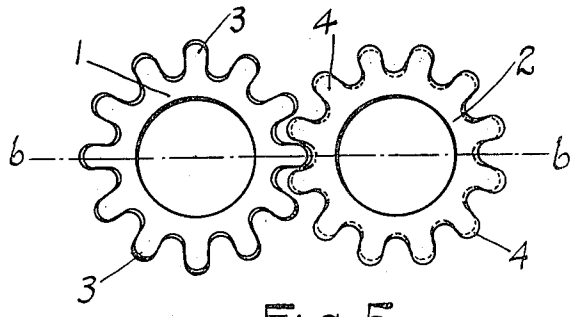


FIG. 5.

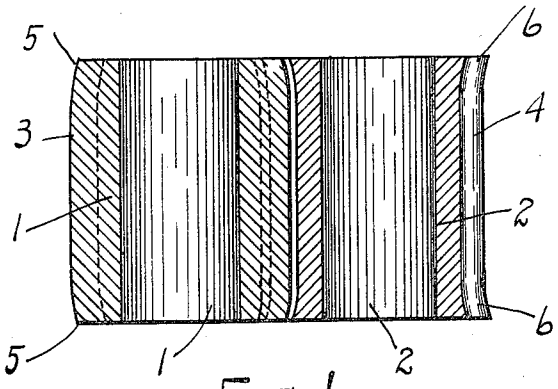


FIG. 6.

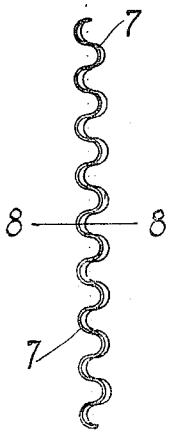


FIG. 7.



FIG. 8.

INVENTOR.
Henry Sway
By Johnson & Krebbs
ATTORNEY.

Patented July 3, 1923. 1,460,805

UNITED STATES PATENT OFFICE.

HENRY SWAY, OF CINCINNATI, OHIO.

RADIATOR CORE.

Application filed September 22, 1920. Serial No. 411,962.

To all whom it may concern:

Be it known that I, HENRY SWAY, a former subject of the Czar of Russia, now a citizen of Latvija, a part of the former Russian Empire, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Radiator Cores, of which the following is a specification.

The object of my invention is to produce a simple, symmetrical and highly efficient core for automobile radiators, having uniformity of strength throughout, and possessing a high degree of efficiency and utility.

One of the salient features of my invention consists in forming each independent section which makes up the core, of the same uniform strength, thickness and durability, so that when the sections are united to form the radiator core, each part is uniformly strong, there being no weak points in the formed up core, when it is ready for use.

I obtain this object and feature by flaring the ends of the sectional parts, which, when combined form the core; so that, when they are dipped at each end or side, they are uniformly united, and just as strong and uniform at this point and directly adjacent thereto, as any other part of the core.

In the various features of my invention, their advantages will readily become apparent from the following specification.

In the accompanying drawings forming part of this specification.

Fig. 1, is an isometric view, to show the appearance of the core, when entirely made up.

Fig. 2, is a section on line 2—2 of Fig. 1,

Fig. 3, is a section on line 3—3 of Fig. 1,

Fig. 4, is an end view of two of the sections partly broken away,

Fig. 5, is an end view of the rolls I employ in making the radiator cores.

Fig. 6, is a sectional view taking on the line 6—6 of Fig. 5.

Fig. 7, is an end view of one of the sections before it has been bent over, showing the same as it comes from the rolls, and

Fig. 8, is a section on line 8—8 of Fig. 7.

It will be noted that the rolls 1 and 2 carry meshed forms 3 and 4, respectively; the forms 3 are curved at their ends 5 and the forms 4 are flared at their ends 6, (see Fig. 2); so that, when the sheet of metal is rolled therethrough, it will come out corrugated in form, as shown in Fig. 7, and said strip of metal will be flared as shown at 8 at each side in Fig. 8.

The strip 7, as shown in Fig. 7, is bent over and doubled, as shown in Fig. 3, and by thus bending the same it becomes rounded at the end 9 and is crimped, or dipped or otherwise connected together at the end 10; the section below or above this strip, is likewise bent and formed, except, that it is reversely laid contiguous to its adjacent strip, and thus these various sections are placed one above the other, until the required number have been placed together; they are then dipped, so that at their ends they will become united, as shown at point 12, at Figs. 3 and 4.

When thus united it will be seen that spaces 13 are left between them; through these spaces 13, the water circulates; the air passing through and circulating through the large spaces or openings 14.

It will be noted and readily understood, that by this peculiar formation of the sections, they will be uniform in thickness or strength, no weak point is left for the attack of the heated water and other extraneous matters, that when these sections are laid one above the other, they can easily and readily be dipped at the ends to form a tight, formed and dependable point.

While I have shown the rolls of corrugating form and the strip 7 of similar form, I wish to be understood as not limiting myself to this particular form, but may form the rolls and the sectional sheet of metal that passes therethrough of some other contour and configuration, and form the ends, so that they will have the same strength as the body of the strip, so that they can be united as above described herein.

It has been customary by using the methods now in vogue, to upset, depress or stamp the metal in order to form the bearing surface at the extremity of the bent metal strips, so that they can be dipped to form the finished core. This weakens the core at the points between the bearing surface edge and the commencement of the water space, so that durability and dependability of the core is somewhat impaired, on account of the stretch and upset of the metal; thus my core is superior in quality, dependable, appearance, efficiency and in utility.

What I claim as new and my invention and desire to secure by Letters Patent is:

1. A radiator section including a transversely corrugated strip of sheet metal, the peaks of the ridges of said corrugations and the bottoms of the cavities of said corrugations being gradually curved towards their outer ends, said strip being folded intermediate its ends to form air passageways and the peaks of said ridges on the opposite sides of said fold abutting against each other, the portions of the folded strip between said abutting ridges forming substantially frustro-conical tubular portions at the ends of the air passageways, and the ends of said strip being connected together.

2. In a radiator, a series of sheet metal sections, each section consisting of a transversely corrugated strip folded intermediate its ends and the ridges on the portions of the strip on one side of the fold abutting against the ridges of the portion of the strip on the other side of the fold to form air passageways, the wall of each of said air passageways being gradually curved outwardly from its intermediate portion towards its edge, the outer surfaces of each folded strip forming cavities and ridges, the last mentioned ridges of each strip projecting into the cavities of adjacent strips to provide water passageways, and joints water-sealing the abutting edges of said strips.

In testimony whereof, I affix my signature at Cincinnati, Ohio, this 20th day of September, 1920.

HENRY SWAY.