

E. C. F. STREICHERT.
 PROCESS OF ASSEMBLING RADIATOR CORES,
 APPLICATION FILED OCT. 16, 1911.

1,049,940.

Patented Jan. 7, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

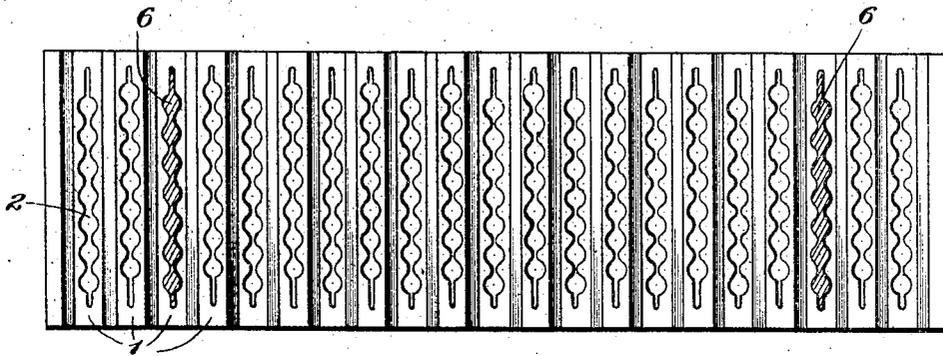


Fig. 2.

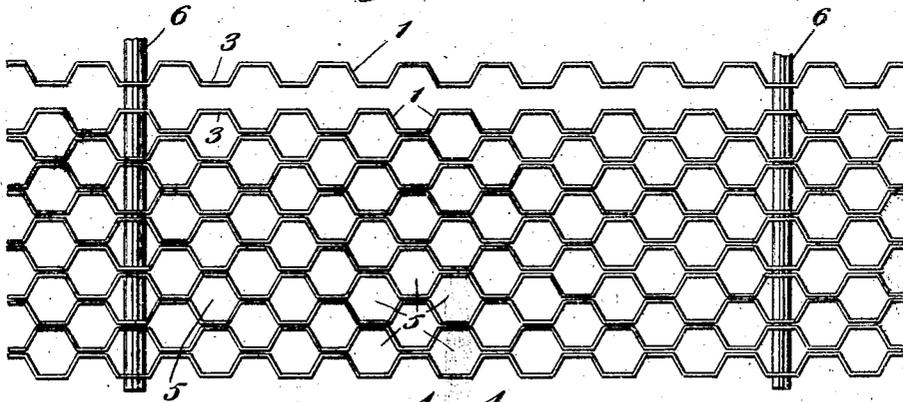
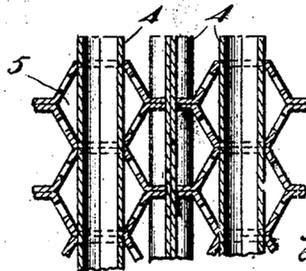


Fig. 6.



Witnesses
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2 SHEETS—SHEET 2.

Fig. 3.

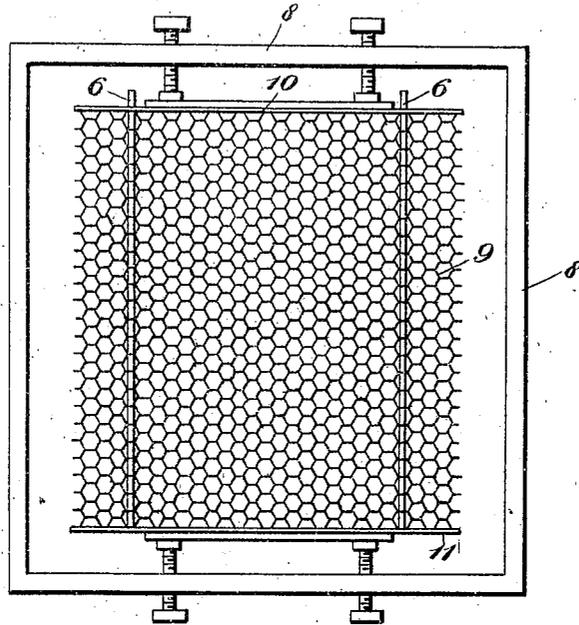


Fig. 4.

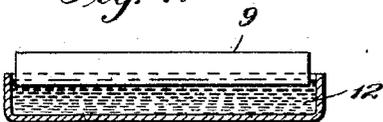
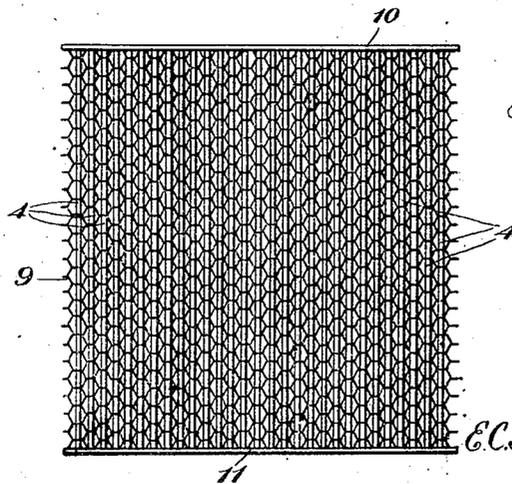


Fig. 5.



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UNITED STATES PATENT OFFICE.

EMIL CARL FRIEDRICH STREICHERT, OF LOCKPORT, NEW YORK, ASSIGNOR TO THE HARRISON RADIATOR COMPANY, OF LOCKPORT, NEW YORK, A CORPORATION OF NEW YORK.

PROCESS OF ASSEMBLING RADIATOR-CORES.

1,049,940.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed October 16, 1911. Serial No. 654,964.

To all whom it may concern:

Be it known that I, EMIL CARL FRIEDRICH STREICHERT, a subject of the Emperor of Germany, residing at Lockport, in the county of Niagara and State of New York, have invented certain new and useful improvements in Processes of Assembling Radiator-Cores; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a process of assembling the elements constituting a radiator, and has for its object to produce a method of constructing radiators which is more efficient and less costly than the methods now in use.

To these ends the invention consists in the novel steps constituting my invention hereinafter more fully disclosed and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification in which like numerals designate like parts in all the views:—Figure 1 is a plan view of a set of corrugated plates or distance pieces partially assembled to form my radiator; Fig. 2 is a side elevational view of the parts shown in Fig. 1, and illustrating the first steps of my process; Fig. 3 is a side elevational view of a core after having been assembled and held in a frame; Fig. 4 is a diagrammatic view illustrating the dipping of the core shown in Fig. 3, into molten metal in order to secure the parts together; Fig. 5 is a side elevational view of the dipped core with the tubes in place; and, Fig. 6 is an enlarged detail sectional view of a portion of the completed radiator core.

The essence of this invention, as will appear below, consists in assembling in perfect form the core of the radiator, which is built up of distance pieces or fins, and before the tubes are pushed through, irrespective of the shape or corrugations in the distance pieces, or the contour of the tube which is used to circulate the water from the top to the bottom of the radiator.

Flexible transversely-corrugated plates 1 are shown perforated as at 2 to receive tubes of the size and shape of the said perforations 2, and 3 represents the portions of the distance pieces which fit together to form the air passages 5 extending at right angles

to the tubes 4, fitting in the perforations 2, when the radiator is completed.

At present, as is well known, considerable trouble and expense is encountered in building up the core provided with these air passages 5, and in fitting the tubes 4 through the corrugated distance pieces forming the air passages. According to my present process, however, I employ rods or tubes 6 near each end of a nest of corrugated distance pieces 1 and thread said rods through the perforations 2, forcing the said distance pieces one on top of the other with their portions 3 contacting with each other, so as to form air passages 5, as best indicated in Fig. 2; said rods or tubes 6 constituting rigid positioning guides for the several assembled distance pieces. In this way, the entire core of the radiator is built up to contain the proper number of distance pieces or fins 1 and the parts are brought into perfect register. Rigid members 10 and 11, such as flat plates or the usual top and bottom headers, are then threaded on the positioning guides 6 and clamped in place on the core 9, as by a clamping frame 8; said rigid members 10 and 11 constituting means for confining the positioning guides 6 against movement relative to each other, thereby preventing longitudinal extension of the corrugated distance pieces under pressure. The parts are next forced together until the required dimensions of the core are obtained, when one of the faces, such as the front for example, of the core 9 is then dipped into a bath of molten metal 12 and the parts firmly secured together along the front face only. The core is then removed from the bath 12 and the rear face is likewise dipped, thus securing the parts firmly together upon the rear face. After the core of corrugated pieces has thus received dippings upon its front and rear faces, it constitutes a perfectly rigid unit, and the tubular elements 4 can then readily be slid through their perforations 2 and a core provided with tubes completely finished.

It will thus be seen that the parts can according to the disclosure above, be assembled in perfect form, and the core built up of distance pieces before the tubes are pushed through, irrespective of the particular shape or corrugations in the distance pieces, or irrespective of the contour of the tube which is used to circulate the water

from the top to the bottom of the radiator. After the core thus formed has received its tubes, as indicated in Figs. 5 and 6, it may then be secured to the shell or tank construction of the radiator in any manner desired. A convenient form of securing the same to said shell construction is that disclosed in my copending application Serial No. 654,963 filed October 16, 1911 and entitled radiators.

10 It is obvious that those skilled in the art may vary the details of the steps above disclosed, as well as the sequence thereof, and therefore I do not wish to be limited to such disclosure except as may be required by the
15 claims.

What I claim is:—

1. The herein described process of forming radiator cores, which consists in threading rigid positioning guides through the end portions of a perforated series of flexible transversely-corrugated plates, confining said guides against movement relative to each other, compressing said series of corrugated plates, and firmly connecting the longitudinally-extending edges of such compressed series of corrugated plates.

2. The herein described process of form-

ing radiator cores, which consists in threading rigid positioning guides through the end portions of a perforated series of flexible transversely-corrugated plates, confining said guides against movement relative to each other, compressing said series of corrugated plates, and immersing the longitudinally-extending edges of such compressed series of corrugated plates in a molten bath to secure said several plates together.

3. The herein described process of forming radiator cores, which consists in threading rigid positioning guides through the end portions of a perforated series of flexible transversely-corrugated plates, confining said guides against movement relative to each other, compressing said series of corrugated plates, and threading a plurality of water tubes through the perforations of such connected series of flexible corrugated plates.

In testimony whereof, I affix my signature, in presence of two witnesses.

EMIL CARL FRIEDRICH STREICHERT.

Witnesses:

HUBERT F. MARION,
N. GOULD ALLEN.