R. OSHKOSH.

SECTIONAL RADIATOR.

APPLICATION FILED AUG. 28, 1920.

1,423,449.

Patented July 18, 1922.

2 SHEETS—SHEET 1.

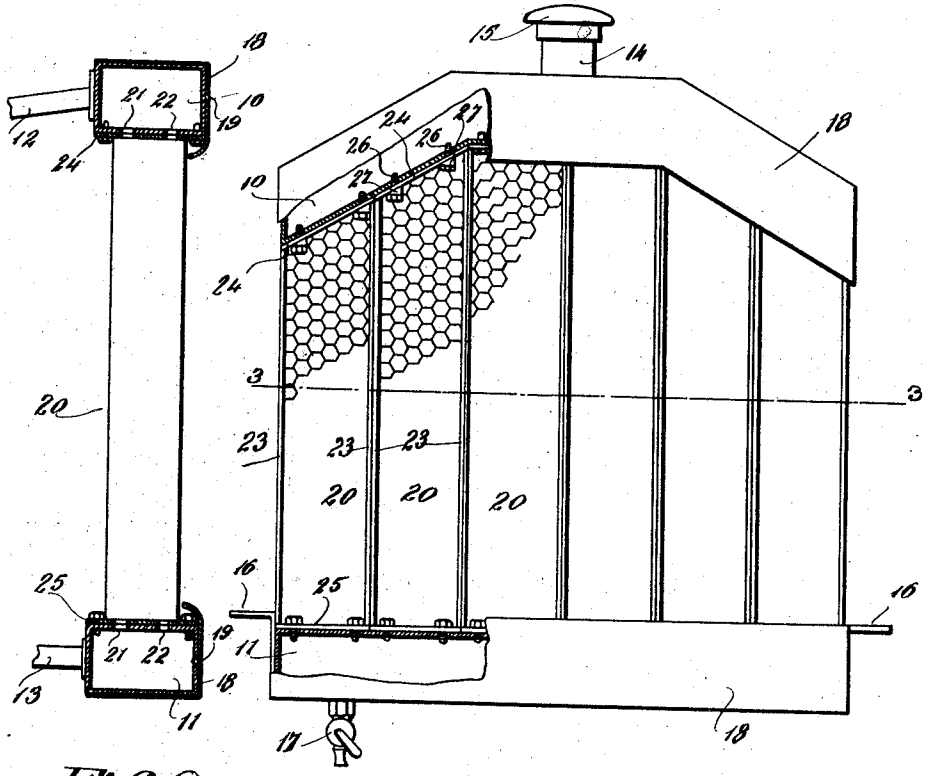


Fig. 2.

Fig. 1.

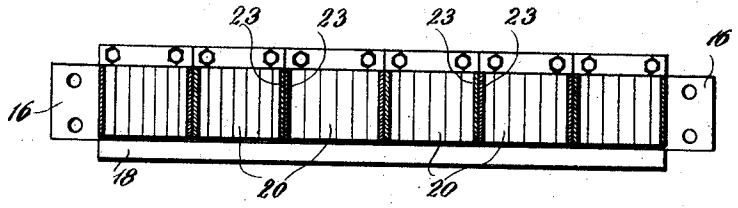


Fig. 3.

WITNESS:
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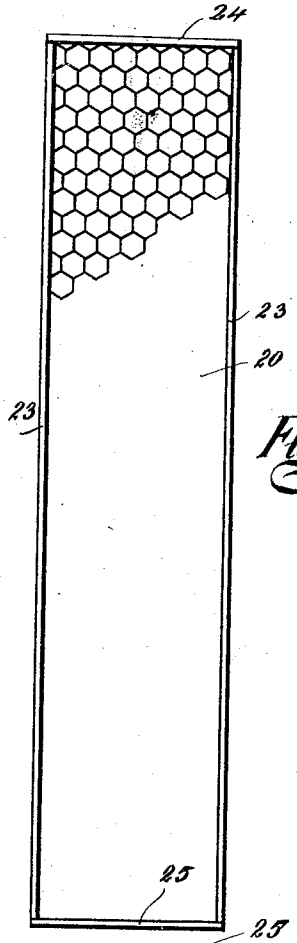


FIG. 4.

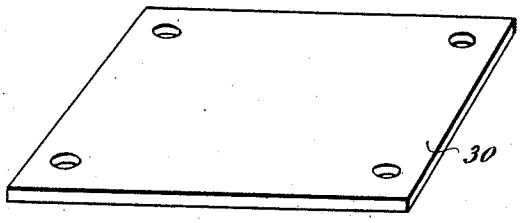


FIG. 6.

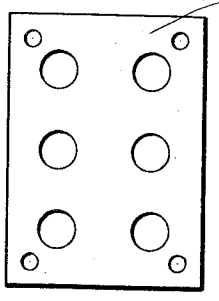


FIG. 5.

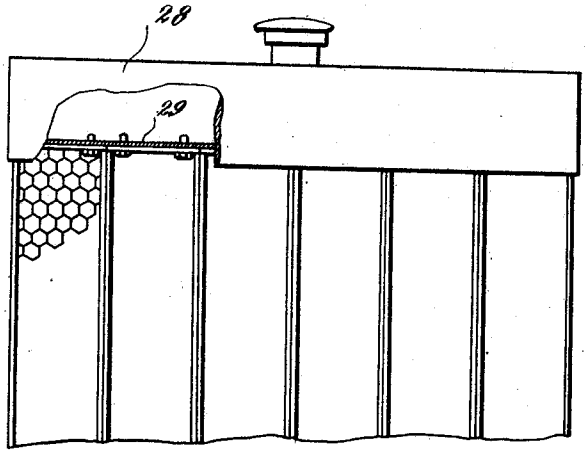


FIG. 7.

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SECTIONAL RADIATOR.

1,423,449. Specification of Letters Patent. Patented July 18, 1922.

Application filed August 28, 1920. Serial No. 406,589.

To all whom it may concern:

Be it known that I, ROY OSHKOSH, a citizen of the United States, residing at Manitowoc, in the county of Manitowoc and State of Wisconsin, have invented new and useful Improvements in Sectional Radiators, of which the following is a specification.

This invention relates to radiators for automobiles and has for its object the provision of a radiator which is formed in separate sections, any one of which may be removed in the event that it springs a leak and the resultant spaces normally provided for communication between the upper and lower tanks being closable by plates so that in the event of an accident injuring the radiator a quick repair may be made.

An important object is the provision of a device of this character in which the construction is such that the sections, which are preferably of the honey comb type, are made in interchangeable units so that when a section leaks from damage or other reason, it may be replaced by a similar section without necessitating the unsightly patching or soldering necessary in the ordinary radiator, the sections being held in place between the upper and lower tanks merely by screws.

An additional object is the provision of a radiator of this character which will be simple and inexpensive in manufacture, highly efficient in use, durable in service, and a general improvement in the art.

With the above and other objects and advantages in view, the invention consists in the details of construction to be hereinafter more fully described and claimed and illustrated in the accompanying drawings in which—

Figure 1 is a front elevation of a radiator constructed in accordance with my invention, parts thereof being broken away and in section,

Figure 2 is a vertical sectional view,

Figure 3 is a cross sectional view on the line 3—3 of Figure 1,

Figure 4 is a detail view of one of the sections detached,

Figure 5 is a plan view of the end thereof,

Figure 6 is a perspective view of one of the emergency closure plates, and

Figure 7 is a front elevation of a modified form.

Referring more particularly to the drawings, I have shown my radiator as comprising upper and lower tanks 10 and 11, respectively, and as shown in Figure 1, the upper tank has an angular under surface, as clearly indicated. These tanks are of ordinary construction and are provided with water inlet and outlet pipes 12 and 13, respectively. The tanks 10 and 11 are of ordinary construction, that is they are formed of sheet metal, preferably brass, of suitable gage and soldered or otherwise secured together at their seams. The upper tank 10 is provided with the usual filling neck 14 provided with a closure cap 15. The lower tank 11 has associated therewith right angularly extending brackets 16 adapted for attachment upon the frame of an automobile whereby to secure the radiator in position. It is also apparent that the lower tank 11 may be provided with the usual drain cock 17.

As is the ordinary practice, my radiator structure is enclosed within the usual shell 18 which is ordinarily formed of sheet iron suitably enameled and which is for the purpose of presenting a pleasing appearance and this shell is secured to the upper and lower tanks by means of suitable screws 19.

Disposed between the upper and lower tanks are separate sections 20, each of which is of the honey comb type and these sections establish communication between the upper and lower tanks through openings 21 and 22 in the lower and upper faces thereof, respectively.

Each section 20 comprises side walls 23 and upper and lower end walls 24 and 25, respectively, and the honey comb structure is soldered to these walls with the openings at the upper and lower ends of the honey comb structure registering with holes 24^a and 25^a in the upper and lower walls 24 and 25 which register with the openings 21 and 22 in the upper and lower tanks. It is of course necessary that the upper and lower end walls 24 and 25 of the sections be carefully fitted or ground so that they will fit snugly against the upper and lower tanks so as to prevent leakage. The various sections 20 are secured in position between the upper and lower tanks by means of cap screws 26 which pass through the upper and lower end walls 24 and 25 and which are threaded into lapped holes in the lower and upper walls of the upper and lower tongues, respectively.

As shown in Figure 1, the upper tank 10 has its under surface or lower side angular and the screw receiving holes therein must therefore also be angular and in this instance I provide the upper end walls of the sections with triangular shaped reinforcements 27, as clearly shown in Figure 1, so that the cap screws will extend longitudinally with respect to the sections 20.

In Figure 7 I have shown the upper tank 28 as having a horizontal lower surface 29. In other respects this form is identically the same as the first described form, the only difference being that in the second mentioned form there is no necessity for the triangular reinforcements 27 as the cap screws pass directly through the upper ends of the sections and into the lower wall of the upper tank at right angles thereto.

In the use of the radiator it will be seen that if a section is damaged it may be readily removed and replaced by another similar section merely by removing the eight cap screws which hold each section in position. In actual practice it may be found that the meeting faces of the sections and tanks should be shellacked prior to securing a section in position so as to form a water-tight joint.

In case of emergency, as for instance in case of accident which will produce a serious leak in one of the sections, the section may be removed entirely after which a pair of plates 30 may be secured upon the underside of the upper tank and upon the upper side of the lower tank to cover the openings 21 and 22. This plate is of course of the same size and shape as the end of a section and must be accurately fitted so as to form a liquid tight joint when bolted in place by the cap screws.

From the foregoing description and a study of the drawings it will thus be apparent that I have provided a simply constructed and inexpensive radiator structure for automobiles which is sectional and in which any section may be removed and replaced by another without disassembling the entire radiator and without any necessity whatever for soldering. It is also apparent that in case of emergency a leaking section may be removed and a pair of closure plates secured in position to take the place of the missing section until the proper replacement can be effected.

While I have shown and described the preferred embodiment of my invention, it is of course to be understood that I reserve the right to make such changes in the form, construction, and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claim.

Having thus described my invention, I claim:

An automobile radiator comprising upper and lower tanks, the upper tank being provided in its bottom with a plurality of openings and a series of threaded holes, the lower tank being provided in its top with a plurality of openings and a series of threaded holes, a plurality of sections disposed between said tanks and having their upper and lower ends flat to conform to the bottom and top of the upper and lower tanks respectively, said sections being disposed in contacting relations to one another, cap screws carried by the upper and lower ends of the sections and threadedly engaged within said threaded holes in the bottom of the upper tank and top of the lower tank, and said flat ends being provided with openings registering with the openings in the tanks, the sections being removable.

In testimony whereof I affix my signature.

ROY OSHKOSH.