L. S. TUCKER.

RADIATOR FOR MOTOR VEHICLES.

APPLICATION FILED JUNE 1, 1921.

1,434,724. Patented Nov. 7, 1922.

2 SHEETS—SHEET 1.

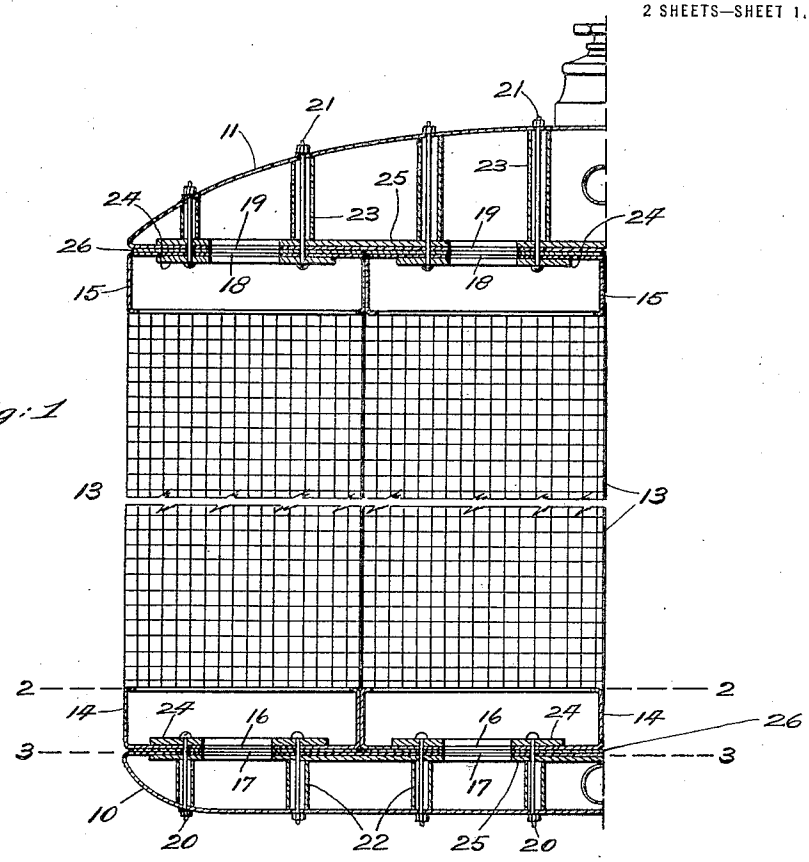


Fig: 1

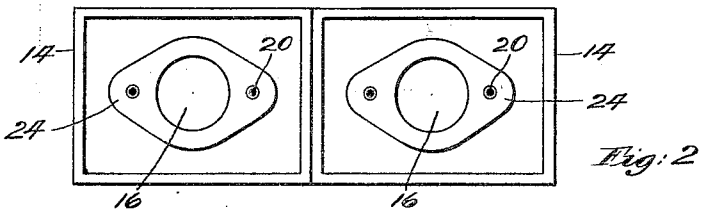


Fig: 2

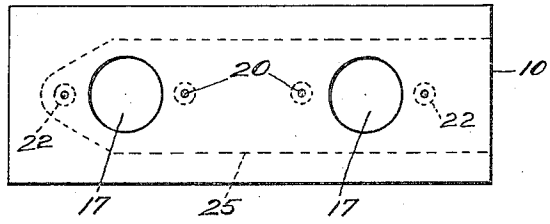


Fig: 3

INVENTOR.

Louis S. Tucker.

BY William J. Jackson

ATTORNEY.

L. S. TUCKER.

RADIATOR FOR MOTOR VEHICLES.

APPLICATION FILED JUNE 1, 1921.

1,434,724.

Patented Nov. 7, 1922.

2 SHEETS—SHEET 2.

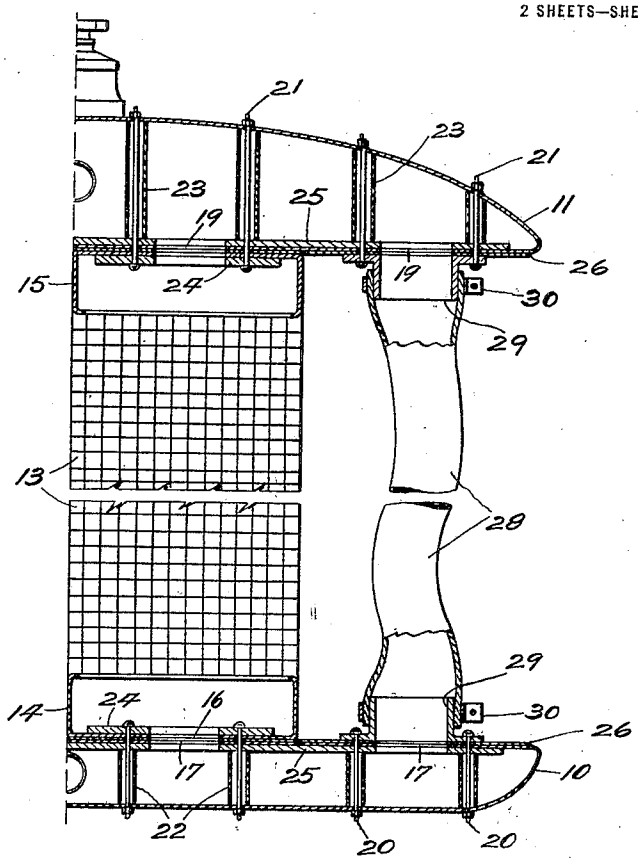


Fig. 4

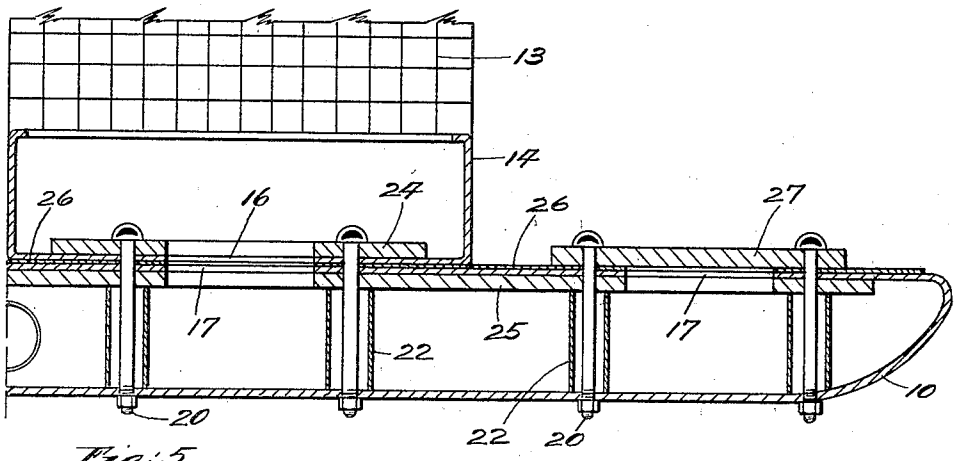


Fig. 5

INVENTOR.
Louis S. Tucker.

BY William J. Jackson

ATTORNEY

Patented Nov. 7, 1922. 1,434,724

UNITED STATES PATENT OFFICE.

LOUIS S. TUCKER, OF PHILADELPHIA, PENNSYLVANIA.

RADIATOR FOR MOTOR VEHICLES.

Application filed June 1, 1921. Serial No. 474,158.

To all whom it may concern:

Be it known that I, LOUIS S. TUCKER, a citizen of the United States, and a resident of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Radiators for Motor Vehicles, of which the following is a specification.

The present invention relates to a radiator as is employed upon a motor-vehicle for cooling the water of circulation which passes through the jacket of the internal combustion engine thereof and has more especial relation to a radiator construction which is adaptable to either the pleasure or commercial type of vehicle.

The leading object of the present invention is to provide a radiator construction in which the core as a whole is made up of several sections or units each of which is so arranged that it may be readily removed without interference with an adjacent unit and without impairing the operativeness of the radiator. Other and further objects relate to the provision of general arrangements, combinations and connections of parts for attaining the results sought by the leading object.

The invention consists of the improvements hereinafter described and finally claimed.

The nature, characteristic features and scope of the invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof and in which:

Fig. 1, is a fragmentary view in front elevation partly sectioned of a radiator embodying features of the invention.

Fig. 2, is a view in horizontal section taken upon the line 2—2 of Fig. 1.

Fig. 3, is a similar view taken upon the line 3—3 of Fig. 1.

Fig. 4, is a fragmentary view in front elevation partly sectioned illustrating a unit removed and piped connection substituted therefor, and

Fig. 5, is a similar view illustrating the manner of closing upper and lower tanks when a unit is removed.

For the purpose of illustrating my invention, I have shown in the accompanying drawings two forms thereof which are at present preferred by me, since the same have been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of the instrumentalities as herein shown and described.

In the drawings 10 designates a lower tank and 11 an upper tank. In the type employed upon a pleasure car the tanks may be made of thin sheet brass or copper and when employed upon commercial vehicles may be of cast iron or other relatively heavy material. Between these tanks are adapted to be removably fitted a plurality of vertical sections or units comprising the radiator cores which are indicated more or less diagrammatically at 13. Since the several units are of uniform structure a description of one will suffice. 14 designates a lower header and 15 an upper header secured between which as by brazing, is the core. The headers are made of brass or copper or cast iron in accordance with the tanks to which they are to be secured. Each header 14 is of generally rectangular configuration, the inner end being open and the outer end being centrally apertured as at 16 in register with an opening 17 in the inner face of tank 10. Each header 15 is similarly constructed having an opening 18 in register with opening 19 in tank 11. A lower header is secured to tank 10 by means of bolts 20 which pass vertically through tank 10. An upper header is secured by bolts 21 which pass vertically through tank 11. In pleasure-car constructions, because of the thin metal employed, it is necessary to employ spacers 22 and 23 in tanks 10 and 11 adjacent the parts penetrated by bolts 20 and 21. Reinforce plates are also desirable. Each header is provided with such a plate 24 and each tank with a plate 25. The plates 24 and 25 are apertured in register with the openings in the tanks and the openings in the headers. The spacers serve to keep the plates in the tanks properly positioned. Thus when the nuts of the bolts are tightened the plates serve to prevent bending and breaking of the thin metal of which the headers and tanks are made. In commercial vehicles where the tanks and headers are constructed of heavier metel the spacers, and plates may be dispensed with. Gaskets 26 are preferably placed between the meeting faces of the tanks and headers. Should a leak occur in one of the above described units it may be readily removed for repair. If it be desired to immediately use the vehi-

cle from which such section has been removed the radiator may be temporarily arranged to properly function by either closing, by plate 27, the openings in the upper and lower tanks or by connecting the two tanks by means of—for instance a rubber hose 28. In the latter case a flanged sleeve 29 is secured to each tank in alignment with a tank opening and the rubber hose secured to each sleeve as by a clamp 30. Whether the plates 27 or the hose 28 be employed the same bolts which secure the headers to the tanks may be utilized.

It will now be apparent that I have devised a novel and useful construction which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description and while I have in the present instance shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

What I claim is:

In a radiator the combination of upper and lower tanks, a plurality of separately removable units fitted between said tanks and communicating therewith each unit comprising a pair of headers having cores therebetween, bolts passing through the upper tank into each upper header, other bolts passing through the lower tank into each lower header and nuts engaging said bolts for clamping said parts together and pipe means adapted to be connected between said tanks upon removal of a unit.

In testimony whereof, I have hereunto signed my name.

LOUIS S. TUCKER.