Nov. 8, 1927. 1,648,804

E. G. GRIESE

RADIATOR CONSTRUCTION

Filed Dec. 11 1926 2 Sheets-Sheet 1

Fig. 1

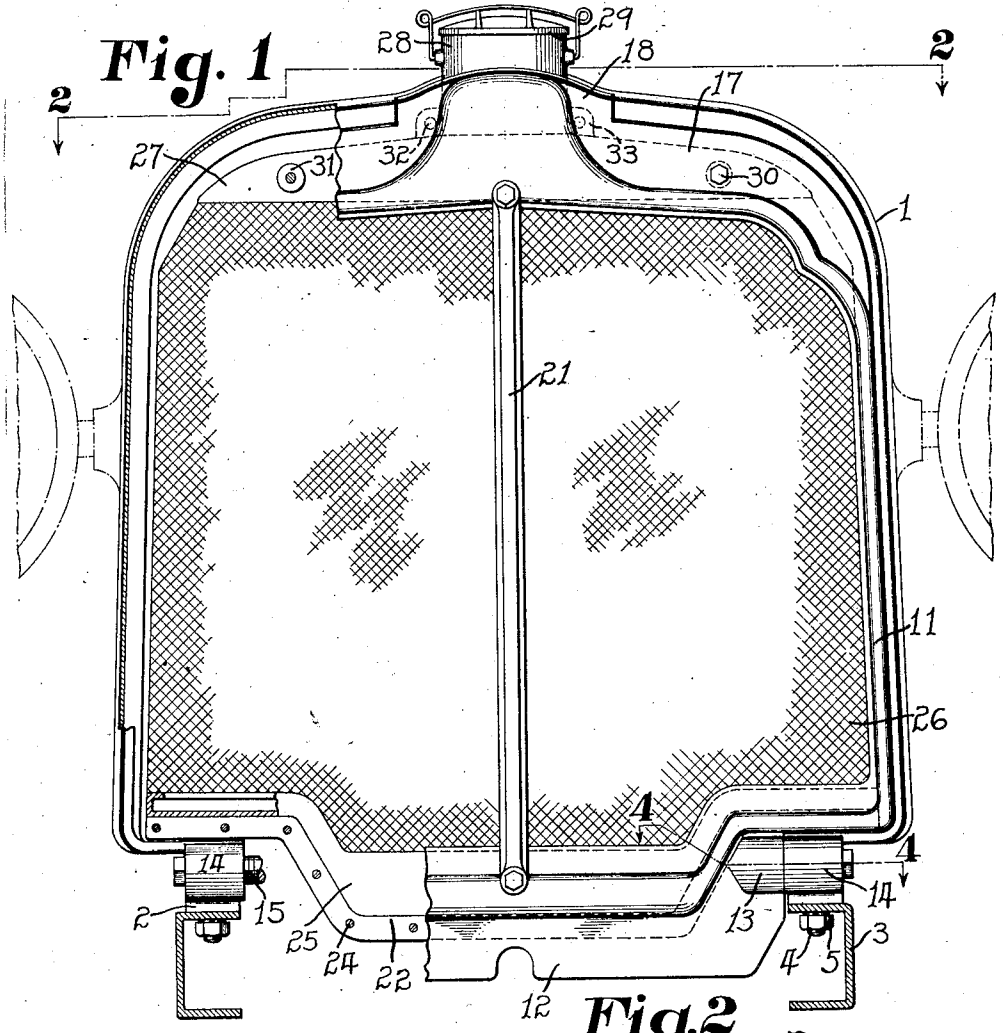
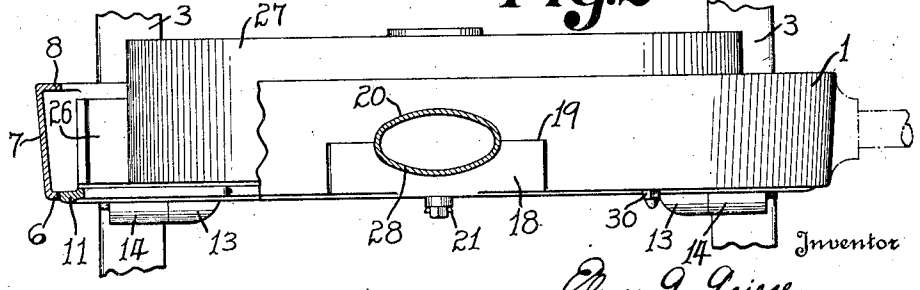


Fig. 2



Inventor

Elmer G. Griese

By Owen & Owen

Attorneys

Nov. 8, 1927. 1,648,804

E. G. GRIESE

RADIATOR CONSTRUCTION

Filed Dec. 11 1926 2 Sheets-Sheet 2

Fig. 3

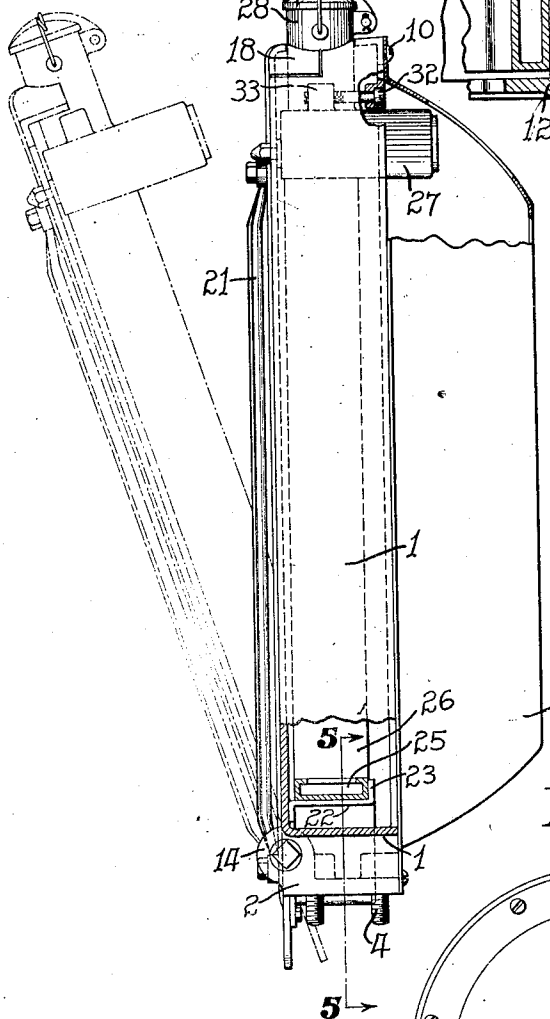


Fig.4

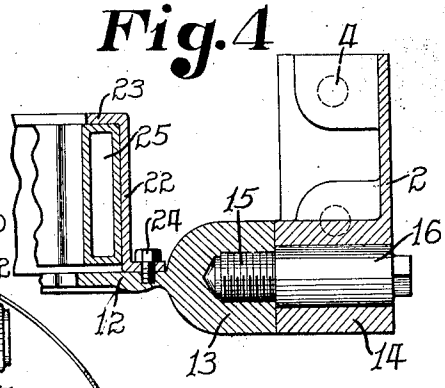


Fig.5

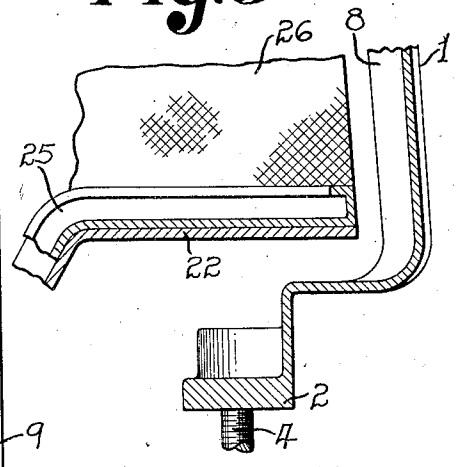
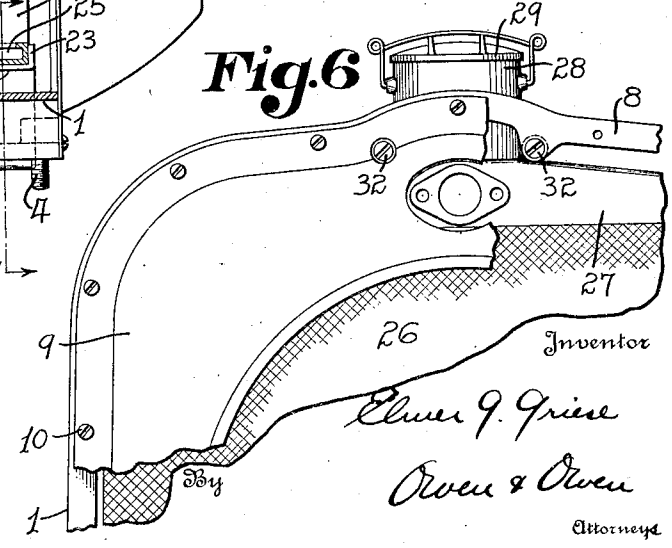


Fig.6



Inventor

Elmer G. Griese

Owen & Owen

Attorneys

Patented Nov. 8, 1927. 1,648,804

UNITED STATES PATENT OFFICE.

ELMER G. GRIESE, OF TOLEDO, OHIO, ASSIGNOR TO THE LIBERTY DEVELOPMENT COMPANY, OF TOLEDO, OHIO, A CORPORATION OF OHIO.

RADIATOR CONSTRUCTION.

Application filed December 11, 1926. Serial No. 154,083.

This invention relates to radiators, but particularly radiators for internal combustion engines; and objects are to provide a radiator for internal combustion engines, in which the core may be readily and conveniently removed for inspection or repair without the necessity of dismantling the entire front end of the machine; and to provide a simple and efficient automobile radiator construction having the new and improved features hereinafter described. Further objects and advantages will appear from the following description.

The invention is shown by way of illustration in the accompanying drawings, in which:

Figure 1 is a front end elevation of a radiator construction embodying the invention; Figure 2 is a section on the line 2—2 of Figure 1; Figure 3 is a side elevation with some of the parts broken away; Figure 4 is a sectional view on the line 4—4 of Figure 1; Figure 5 is a section on the line 5—5 of Figure 3; and Figure 6 is a fragmentary rear end elevation of the radiator assembly.

The illustrated embodiment of the invention comprises a shell or casing 1 provided at its lower end in spaced relation with attaching blocks 2 for securing the shell to the channel beams 3 of the automobile subframe, the blocks 2 having depending stud bolts 4 extending through a portion of the channel beam and having nuts 5 screwed thereon. The front end of the shell 1 is provided with an inturned flange 6, and the side wall 7 tapers outwardly toward the rear end of the shell. An inturned flange 8 is formed on the rear edge of the side wall 7 and to which a hood 9 of frusto-conical shape may be secured as by screws 10. It will be understood that the air is drawn through the radiator by the usual fan, and the hood 9 serves to direct or concentrate the stream of air on the engine.

A radiator frame 11 is, in this instance, hingedly connected to the shell or casing 1 at its lower end, and is adapted to be swung outwardly therefrom, as will hereinafter appear. Formed on the lower portion of the radiator frame 11 is an apron 12 having bosses 13 at opposite sides adapted to bear against lugs 14 formed on and extending forwardly from the attaching blocks 2. Threaded into the bosses 13 are bolts 15 having a smooth shank portion 16 rotatably mounted in the bearing lugs 14. It will thus be seen that the radiator frame 11 may be swung outwardly, the shank 16 of the stud bolts 15 serving as pivots therefor. The central portion of the radiator frame 11 is open, but the upper end portion is closed by a plate 17, which may be suitably shaped to present an attractive appearance. The intermediate portion of the plate 17 is provided with a rearwardly extending portion 18, which is adapted to telescope into a similarly shaped cut-out portion 19 in the shell 1, the rearwardly extending portion 18 of the radiator frame 1 and contiguous portion of the shell 1 being cut-out to form an oval shaped opening 20 for a purpose hereinafter described. In order to enhance the attractive appearance of the radiator, a vertically disposed rod 21 connects the upper and lower parts of the radiator frame 11, as shown.

Secured to the inside of the radiator frame 11 adjacent the lower portion thereof, is a shelf 22 having an upwardly extending flange 23 at the outer edge thereof, and bolts 24 secure the shelf 23 to the radiator frame. Supported on the shelf 22 is the lower tank 25 of the radiator core 26. The tank 25 may be suitably shaped to conform to the shape of the shelf 22 and lower portion of the radiator frame 11. The upper tank 27 of the radiator core is provided with the usual filling nozzle 28, and when in position the filling nozzle 28 projects through the oval shaped opening 20 hereinbefore described. Any suitable cap 29 may be provided for closing the open end of the nozzle 28.

For detachably connecting the upper portion of the radiator core to the radiator frame, bolts 30 extend through the plate 17 of the radiator frame, and are in screw threaded engagement with lugs 31 formed on the adjacent surfaces of the upper tank 27. In this instance two screws 30 connect the upper portion of the radiator core to the radiator frame 11.

For detachably connecting the radiator frame 11 and core to the shell or casing 1, a pair of screws 32 extend through the flange 8 on the shell and are screwed into lugs 33 formed on the top of the upper radiator tank 27. As indicated in Figure 1, two screws 32 are sufficient for the purpose. When it is desired to remove the radiator core, the screws 32 are loosened to disconnect the radi-

ator assembly from the shell 1. This permits the radiator assembly to be swung outwardly on the bearing shanks 16 to a position such as shown in Figure 3, although it will be understood that the radiator assembly may be swung to a lower position. Thereafter by loosening the screws 30 the radiator core may be bodily lifted from the shelf 22 and removed from the radiator frame 11. In the event the radiator core is damaged, replacement may be readily effected with a minimum amount of labor.

It is to be understood that the above is given by way of illustration and not of limitation, and numerous changes in details of construction, arrangement and operation may be effected without departing from the spirit of the invention, especially as defined in the appended claims.

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

1. A radiator assembly comprising a shell, a frame pivotally connected to the lower portion of said shell, a radiator core carried by said frame and movable therewith, and means for detachably connecting said core and frame to said shell.

2. A radiator assembly comprising a shell, a frame having a portion telescoping with said shell, means for pivotally connecting the lower part of said frame to said shell, a radiator core, and means for detachably connecting said core to said frame.

3. A radiator assembly comprising a shell, a frame having its upper portion in telescoping engagement with said shell, means for pivotally connecting the lower portion of said frame to said shell, a radiator core having a filling nozzle projecting through said telescoping portions, and means for detachably connecting said core to said frame.

In testimony whereof I have hereunto signed my name to this specification.

ELMER G. GRIESE.