

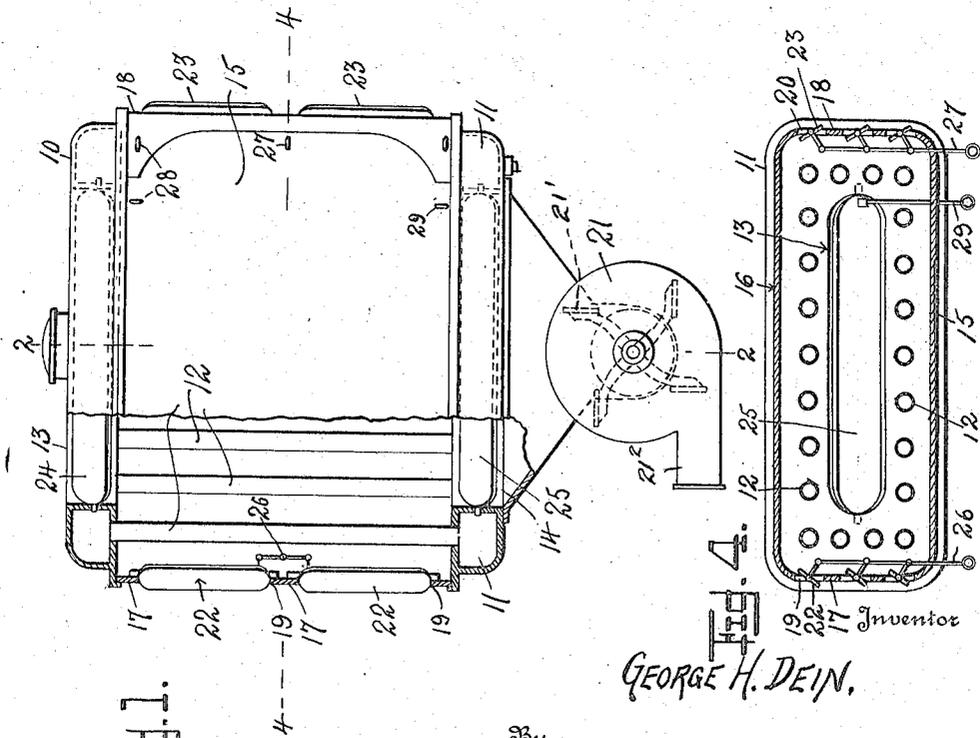
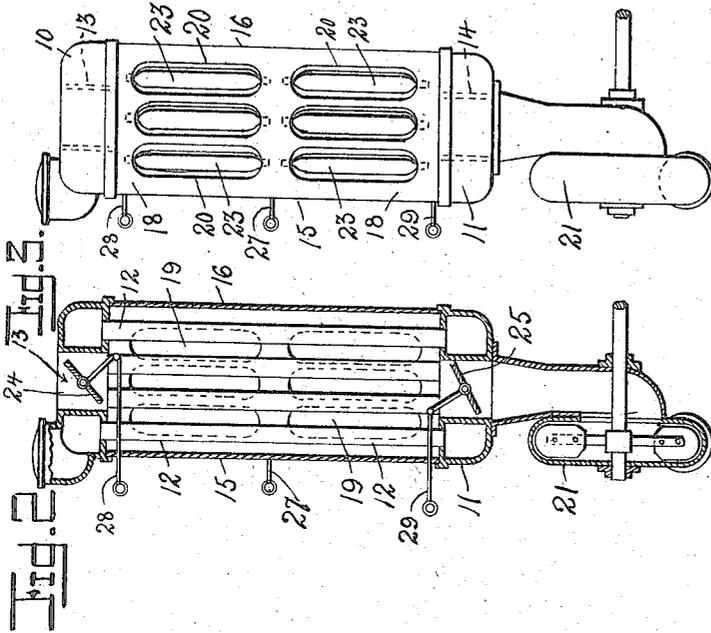
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G. H. DEIN

RADIATOR FOR AUTOMOBILES

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UNITED STATES PATENT OFFICE.

GEORGE H. DEIN, OF BABYLON, NEW YORK.

RADIATOR FOR AUTOMOBILES.

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To all whom it may concern:

Be it known that I, GEORGE H. DEIN, a citizen of the United States, residing at Babylon, in the county of Suffolk and State of New York, have invented certain new and useful Improvements in Radiators for Automobiles, of which the following is a specification.

This invention relates to radiator device, more particularly to those employed in motor driven vehicles, and has for one of its objects to provide improved means for passing induced air currents around the water conducting elements.

With these and other objects in view, the invention consists in certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claims and in the drawings illustrative of the preferred embodiment of the invention.

Figure 1 is a front elevation, partly in section, of the improved radiator.

Fig. 2 is a transverse section on the line 2—2 of Fig. 1.

Fig. 3 is an end elevation.

Fig. 4 is a horizontal section on the line 4—4 of Fig. 1.

The improved device may be adapted without material structural change to radiators of various forms and construction, and it is not desired to limit the invention in any manner in this respect, but for the purpose of illustration a conventional form of tubular radiator is shown in which the upper manifold or head member is represented at 10, the lower or base manifold at 11 and the connecting water conductor tubes or flues at 12. In the improved radiator the manifolds are formed respectively with relatively large longitudinal openings 13—14 providing communication between the spaces surrounding the flues and the outside air.

A casing encloses the flues 12 and extends between the manifolds, the front 15 and back 16 being entirely closed or without openings, while the ends 17 and 18 are formed respectively with numerous openings 19 and 20.

Supported below the radiator is a suction fan 21 having its blades, represented at 21', arranged to discharge toward one side, as represented at 21² operating to cause induced air currents to pass through the openings 13—14 in the manifolds and openings

19 and 20 in the ends of the casing and in contact with the flues 12 and be discharged through the opening 14 in the base manifold and then through the fan casing.

By this simple means strong currents of cold air are caused to constantly flow around the radiator tubes while any air which may be heated by radiation from the tubes, is likewise carried off and replaced by cooler air.

The casing is of sheet metal of any suitable gage and will correspond in outline to the other parts of the automobile hood. The openings 19 and 20 are spaced from the front and rear walls 15 and 16 of the casing as shown in Figs. 2—3 and 4, so that considerable portions of the ends are imperforate thereby increasing the protection of the tubes 12 from air currents while moving through the air especially when moving at high speed.

A swinging shutter 22 is installed in each of the openings 19 and similar shutters 23 are installed in the openings 20. A swinging shutter 24 is installed in the opening 13 in the upper manifold and a similar swinging shutter 25 installed in the opening 14 in the lower manifold.

The shutters 22 are coupled by a rod 26 leading through the adjacent wall of the casing and terminating in a finger ring or eye, while a similar rod 27 couples the shutters 23 and leads through the adjacent wall of the casing and terminates in a finger ring.

The shutter 24 is provided with an operating rod 28 leading through the adjacent wall of the casing and terminating in a finger ring, while the shutter 25 is provided with an operating rod 29 leading through the adjacent wall of the casing and terminating in a finger ring.

By this means the several sets of end shutters and the shutters of the manifolds are independently operative from the exterior of the radiator casing to control the flow of the air currents.

By this arrangement the air is drawn through the ends and top of the radiator casing and discharged through the bottom, and a more thorough and uniform circulation of the air is thereby secured.

The preferred embodiment of the invention is disclosed in the drawings and set forth in the specification, but it will be understood that any modifications within the scope of the claimed invention may be made

in the construction without departing from the principle of the invention or sacrificing any of its advantages.

I claim:

5 1. A radiator device comprising elements through which water is caused to circulate, a casing enclosing said elements and closed at the front and rear and with openings in the ends, top, and bottom, and means for
10 causing induced currents of air to pass through the openings in the ends and top and be discharged through the open bottom.

15 2. A radiator device comprising elements through which water is caused to circulate, a casing enclosing said elements and closed at the front and rear and with openings in the ends, top, and bottom, movable shutters for controlling the flow through said openings, and means for causing induced currents of air to pass through said open ends
20 and top and be discharged through the open bottom.

3. A radiator device comprising elements through which water is caused to circulate,

a casing enclosing said elements and closed 25 at the front and rear with openings in the ends, top, and bottom, a fan device located below the openings in the bottom of the casing and operating to draw the air through the openings in the ends, and
30 top and discharge it through the openings in the bottom.

4. A radiator device comprising elements through which water is caused to circulate, a casing enclosing said elements and closed 35 at the front and rear and with openings in the ends, top, and bottom, the openings in the ends of the casing being spaced from the front and rear walls to provide imperforate portions in the ends adjacent the
40 front and rear walls, and means for causing induced currents of air to pass through the openings in the ends and top and be discharged through the open bottom.

In testimony whereof, I affix my signature 45 hereto.

GEORGE H. DEIN.