

July 14, 1936.

B. KIRSCH

2,047,637

RADIATOR SHELL

Filed Aug. 26, 1935

FIG. 1.

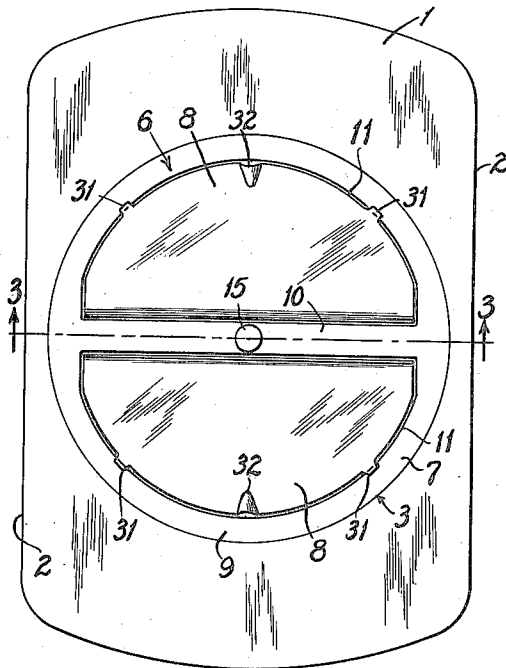


FIG. 2.

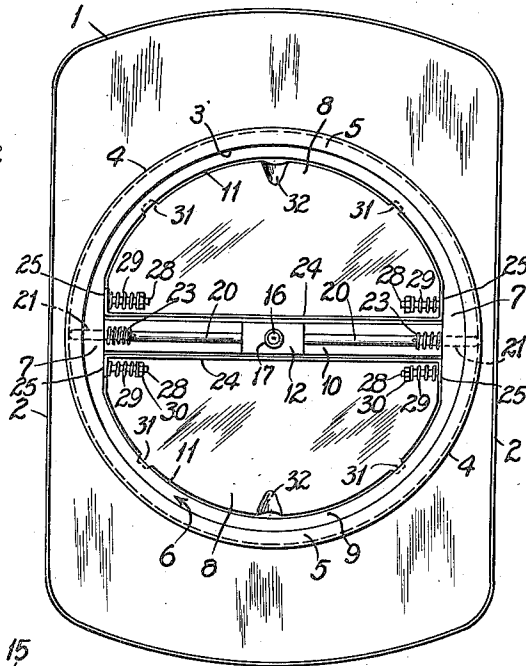


FIG. 3.

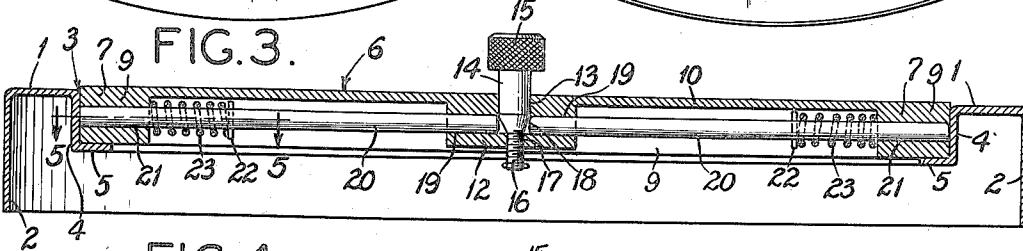


FIG. 4.

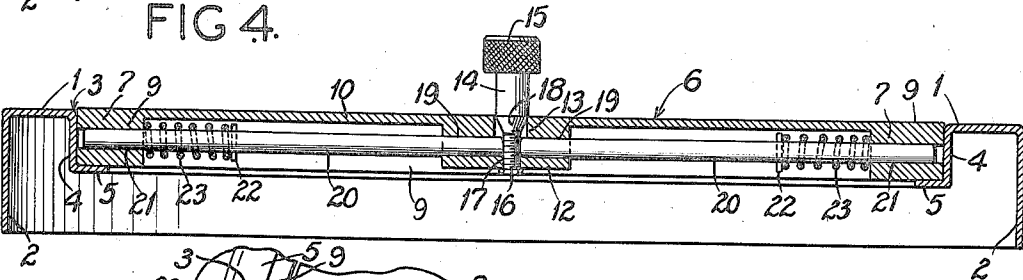
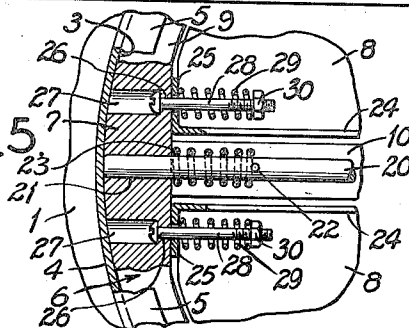


FIG. 5.



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UNITED STATES PATENT OFFICE

2,047,637

RADIATOR SHELL

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Application August 26, 1935, Serial No. 37,836

3 Claims. (Cl. 98—2)

This invention relates to radiator shells, and with regard to certain more specific features, to shells of this class equipped with deflecting apparatus.

Among the several objects of the invention may be noted the provision of a shell for radiators of the automotive type for heating tonneau interiors and the like, having improved, simplified and more rugged means for mounting a deflector, said deflector being removable as a unit to permit the delivery of a maximum draft of heated air, said deflector being also adjustable to provide a draft of heated air in any direction that may be desired; and the provision of apparatus of this class which is exceedingly simple and compact in arrangement and pleasing in appearance. Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly comprises the elements and combinations of elements, features of construction, and arrangements of parts which will be exemplified in the structures hereinafter described, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawing, in which is illustrated one of various possible embodiments of the invention.

Fig. 1 is a front elevation of a radiator shell embodying the present invention;

Fig. 2 is a back elevation of the shell of Fig. 1; Fig. 3 is a horizontal cross section taken on line 3—3 of Fig. 1;

Fig. 4 is a section similar to Fig. 3, illustrating an alternative position; and,

Fig. 5 is a fragmentary cross section taken substantially along line 5—5 of Fig. 3.

Similar reference characters indicate corresponding parts throughout the several views of the drawing.

Referring now more particularly to Fig. 1, there is shown at numeral 1 a stamped metal shield forming the front face of a radiator shell for covering radiator cores. The sides 2 of this shell usually carry suitable openings (not shown) through which bolts pass for fastening the same to a rear shell piece which is customarily provided surrounding the core of the radiator. This core is not shown, nor is the rear shell element shown, because these are known parts.

Stamped in the central portion of the face of the shell 1 is a circular opening 3, comprising side walls 4 (Fig. 3) and an inwardly-extending bottoming flange 5. In the shoulder formed by the side walls 4 and the flange 5, is positioned a deflector assembly indicated generally by numeral

6. The assembly 6 comprises a base part 7 which will be more particularly described hereinafter, which carries adjustable vanes or deflector wings 8, and attaching or securing means, to be described. The general shape of the part 7 is preferably circular, though not necessarily so and will fit relatively snugly into the shell 1, against the flange 5. It will be seen that the circular form is only desirable and that a square or like polygonal form would permit of angular adjustments. The fit is not so tight that the part 7 cannot be readily removed from the shell.

The part 7 comprises a circular, peripheral portion 9, and a single diametrical portion 10, thus leaving suitable semi-circular openings into which are fitted the vanes 8. The diametrical portion 10 mounts the securing means aforesaid.

At the center of the diametrical portion 10, and hence of the assembly 6, there is provided a portion 12 of increased thickness. This portion 12 is centrally drilled, as indicated at numeral 13, to receive a screw 14, having a knurled head 15 projecting in front of the deflector assembly. The rear end of the screw 14 comprises a threaded portion 16 of reduced diameter engaging a suitably threaded hole 17 forming a continuation of the hole 13. Between the portions 16 and 14, there is a tapered portion 18 on the shank of the screw. Hence there is formed a screw taper.

The portion 12 is likewise radially drilled to form diametrically opposite holes 19, in which slide rods 20. The opposite ends of the rods 20 slide through suitably positioned holes 21 in the rim portion 9 of the part 7. In each rod 20 there is provided a pin 22, and a compression spring 23 reacts between the inner face of the peripheral portion 9 of the part 7 and said pin, said spring tending always to push said pin radially inwardly.

Referring to Fig. 4, it will be seen that when the screw 14 is retracted, the springs 23 press the rods 20 inwardly against the relatively small diameter portion 16 of said screw 14. This permits the outer ends of the rods 20 to be relieved from engagement with the side walls 4 formed in the shell 1, and the entire deflector assembly 6 may then be readily removed from the shell, or turned therein, at will.

On the other hand, if the screw 14 is threaded down into the part 7, the tapered portion 16 thereof is brought to bear against the rods 20 and said rods are moved radially outwardly against the springs 23 and the outer ends of the rods are brought into pressure or locking engage-

ment with the wall 4 formed in the shell 1. This position is illustrated in Fig. 3. Under the conditions shown in Fig. 3, the pressure of the ends of rods 20 against the portion 4 of the shell, makes removal of the deflector assembly from the shell impossible.

In other words, by manipulating the knob 15, the deflector assembly may be locked in any desired position in the opening 3 or it may be removed altogether from the opening 3.

The vanes 8 are each provided with a right-angle flange 24 (see Figs. 2 and 5) along the diametrical edge thereof and short right-angle flanges or tabs 25 at the end of the flange 24. The tabs 25 serve hingedly to mount the vanes 8 on the part 7. For this purpose, the part 7 is provided with bores 26 and counterbores 27, into which slip screws 28, the inner ends of which pass through suitable openings in the flanges 25. Compression springs 29 are then fitted on the screws 28, and nuts 30 threaded down on the screws to provide reactions for the springs 29. Upon assembly, it is preferable that the nuts 30 be secured in position either by soldering or by other suitable means. This arrangement is provided at each end of each of the deflector vanes 8.

The circular edges of the vanes 8 are each provided with a pair of projections 31, which project so as to overlap the rim portion 9 of the part 7 and thereby prevent swinging of the vanes into said part 7. Each vane 8 is likewise desirably provided with a thumb-notch or indentation 32, whereby it may more readily be manipulated.

From the foregoing, it will be seen that there has been provided a deflector assembly which is removable or adjustable at will in the radiator shell, merely upon operation of a single knob. It will of course be apparent that upon loosening the knob 15, the angular position of the deflector 6 in the shell 1, may be altered. This feature, together with the angular adjustability of the vanes 8, makes it possible to direct a flow of heated air to whatever portion of the car it is wanted. Also, if an abnormal amount of heat is required, with the direction in which it is delivered temporarily immaterial, the entire deflector assembly may be removed from the shell and thereby no obstruction whatsoever is offered to the flow of heated air.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As many changes could be made in carrying out the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A radiator shell having a circular opening in the face thereof, and a deflector assembly of circular shape adapted to fit in said opening, said deflector assembly carrying clamping means whereby said assembly may be clamped in any angular position in said shell, said deflector assembly being removable from said shell as a unit by manipulation of said means, said clamping means comprising a screw centrally mounted in said deflector assembly, and means extending from and actuated by said screw adapted to be forced against said shell to clamp the deflector assembly in position.

2. In combination, a radiator shell having a central, circular opening therein, said opening having a circular side wall and being bottomed by an inwardly extending flange, and a deflector assembly adapted to fit in said circular side wall and rest against said flange, said deflector assembly including manually adjustable means for clamping against said circular side wall, whereby to hold said deflector assembly in rigid assembly with said shell, said last-named means comprising a screw centrally mounted in said deflector assembly, and at least one rod radially mounted in said deflector assembly, said screw having a tapered portion engaging one end of said rod, whereby upon manipulation of said screw, said tapered portion moves said rod so that the outer end thereof is brought to clamp against said circular wall or is released therefrom, as desired.

3. A radiator shell having an opening in the face thereof, and a deflector assembly of corresponding shape adapted to fit said opening and being angularly adjustable therein, said deflector assembly carrying clamping means whereby said assembly may be clamped in any angular position in said shell, said clamping means comprising a screw taper mounted on the deflector assembly, and means extending from and actuated by said screw taper adapted to be forced against said shell to clamp the deflector assembly in position.

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