July 9, 1935. K. FORBES 2,007,600

RADIATOR SHUTTER

Filed Feb. 13, 1932

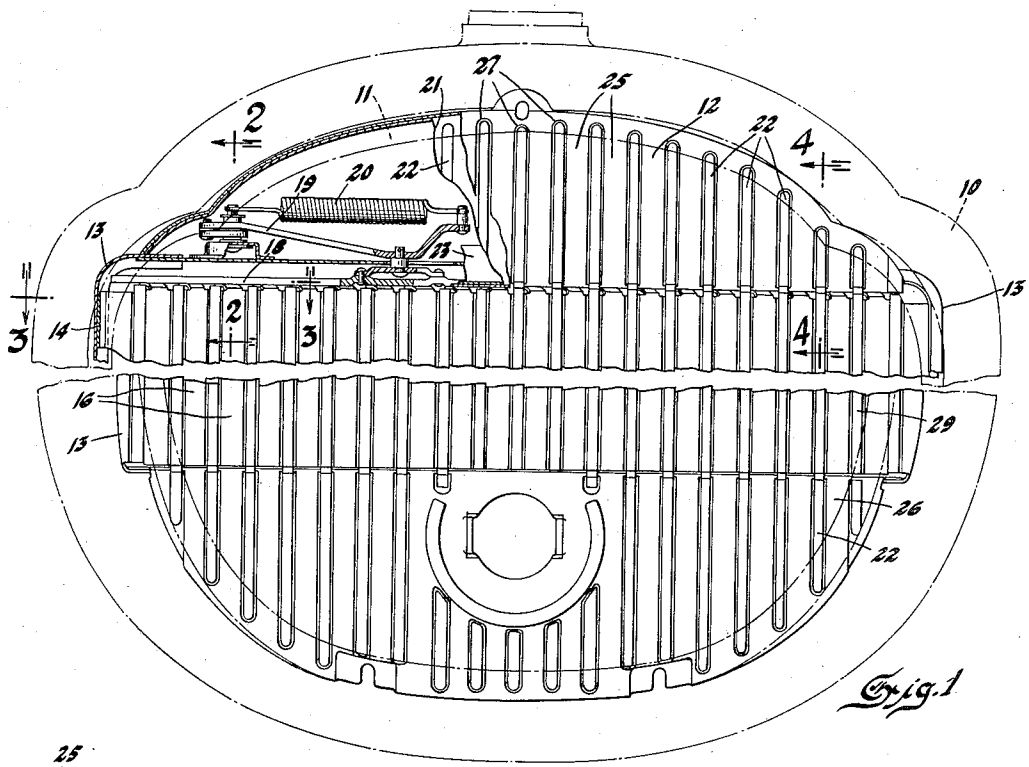


Fig. 1

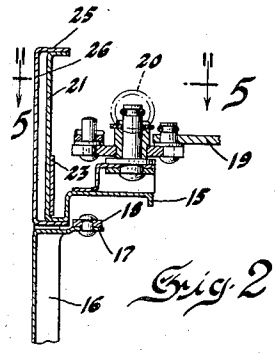


Fig. 2

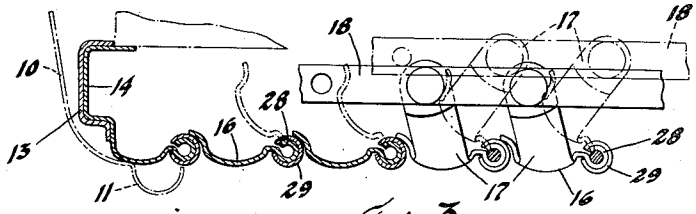


Fig. 3

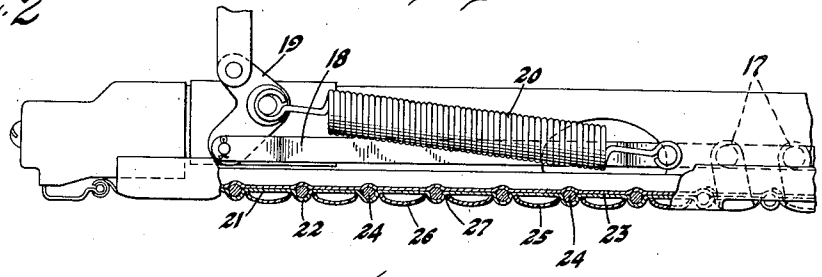


Fig. 5

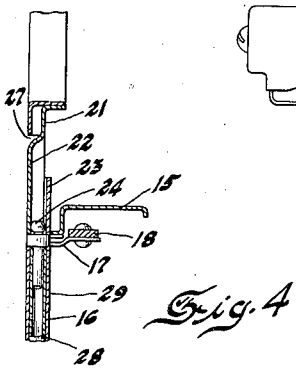


Fig. 4

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RADIATOR SHUTTER

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Application February 13, 1932, Serial No. 592,693

2 Claims. (Cl. 189—62)

In its broadest aspect, this invention resides in a radiator shutter of the type used on automotive vehicles which is rendered distinctive and pleasing in appearance by the presence, throughout the whole exposed length of the blades and the upper and lower dummy plates, of continuous vertical lines of contrasting colors when the shutter is opened as well as when it is closed.

To obtain the distinctive and pleasing appearance referred to in the preceding paragraph, I have found it desirable to employ shutter blades and dummy plates which differ in construction from those used prior to the date of my invention, and which have certain highly desirable features of construction which render them of peculiar value, even in shutters in which the distinctive and pleasing appearance hereinbefore referred to is not a feature.

For a better understanding of the nature and objects of the present invention, reference is made to the following specification in which is described the preferred embodiment of my invention, which is illustrated in the accompanying drawing.

In the accompanying drawing:

Figure 1 is a front elevation, with parts broken away and in section, of a radiator shutter in which is embodied my invention installed in the radiator of an automotive vehicle.

Figure 2 is a fragmentary section taken on the line 2—2 of Figure 1.

Figure 3 is a fragmentary view, mainly in section on the line 3—3 of Figure 1.

Figure 4 is a fragmentary section taken on the line 4—4 of Figure 1.

Figure 5 is a fragmentary view, mainly in section on the line 5—5 of Figure 2.

In the drawing, there is shown a radiator of the type which is commonly used on automotive vehicles, and which includes a core (not shown) and a shell 10 which surrounds the core and is provided with a front flange 11 which defines the boundaries of an opening through which cooling air may obtain access to the core. The reference character 12 indicates a radiator shutter which is installed within the confines of the shell 10 and marginally overlaps the inner edges of the flange, 11. The shutter includes a rectangular frame 13 consisting of lateral and end frame members 14 and 15 which define a generally rectangular opening in which a plurality of vertically disposed, pivotally mounted shutter blades 16 are located. On the upper end of each of the shutter blades, there is formed an ear 17. All of the ears 17 are pivotally connected to a connecting rod 18 which through mechanism, such as that indicated by the reference character 19, is adapted to be operated by a thermostat or a manually actuated device and the spring 20 to move the shutter blades from the positions in which they are shown in solid lines in Figure 3, in which they overlap and prevent access of air to the radiator core, to that in which they are shown in dotted lines in Figure 3, in which they are separated by relatively large spaces through which cooling air may obtain access to the radiator core, and vice versa.

On each of the end frame members 15, there is formed a vertically disposed flange 21 which constitutes the base element of a dummy plate which bridges the gap between the frame member and the adjacent portion of the flange 11. In each of the elements 21, there are formed a number of relatively narrow, vertically disposed corrugations 22 whose concave rear surfaces, in conjunction with the concave portions of a corrugated strip 23 which is secured to the inner portion of the rear side of each of the elements 21, form journals into which the pintles 24 of the shutter blades are adapted to be inserted through openings formed in the inner flange of the base element. Over the front face of the base element of each of the dummy plates, there is disposed a cover element 25 which consists of a plate having inner and outer flanges which embrace and are secured to the corresponding flanges of the base element. In each of the cover elements, there are formed a number of relatively wide corrugations 26 which are separated by slots 27 through which the corrugations 22 on the base element project. In the inner flange of each of the cover elements, there are provided a number of slots which register with the openings in the adjacent flange of the corresponding base element.

Each of the shutter blades consists of a strip of sheet metal of which one longitudinal edge is return-bent upon itself to form a hollow circular bead 28. The inner ends of the pintles 24 extend into and are secured within the ends of the beads 28. To rigidify and strengthen the blades and for another purpose hereinafter mentioned, there is provided a parti-tubular sleeve 29 which surrounds and snugly embraces the bead 28 throughout its length.

To obtain the distinctive and pleasing appearance hereinbefore referred to, I prefer to finish the cover elements of the dummy plates, the bodies of the blades and the core of the radiator in black or in a color which matches or harmonizes with the color of the body of the vehicle on which the

radiator is installed, and to finish the base elements of the dummy plates and the tubular sleeves 29 in a color which contrasts with the color of the cover elements of the dummy plates, the bodies of the blades and the core or by plating them with a "white" metal, such as chromium. If this is done, there will appear in the finished shutter, throughout its entire length, relatively narrow lines formed by the corrugations 22 and the sleeves 29, and relatively wide lines of contrasting color formed by the corrugations 26 and the bodies of the blades and/or the core, depending upon the positions of the blades. It is to be noted that since the narrow lines are in the axes of the blades, there will be no apparent shifting thereof upon movement of the blades, and since both the bodies of the blades and the core contrast in color with the sleeves 29, the spaces between the sleeves 29 will contrast in color with the sleeves irrespective of the positions of the blades and, consequently, that the appearance of the front of the vehicle will not substantially change upon movement of the shutter blades.

Although I have shown and described a preferred embodiment of my invention, it is to be understood that this has been done by way of example and not by way of limitation, and that the scope of my invention is to be determined only by the appended claims.

I claim:

1. A shutter blade which consists of a body on one of whose longitudinal edges there is provided a bead, and a sleeve which embraces and is fixed on the bead.

2. A shutter blade which consists of a body on one of whose longitudinal edges there is formed a bead in which there is secured a pintle, and a sleeve embracing the bead.

KINGSTON FORBES.