May 1, 1923. 1,453,340

F. J. DRUAR

ATTACHMENT FOR MOTOR VEHICLE RADIATORS

Filed Jan. 3, 1919

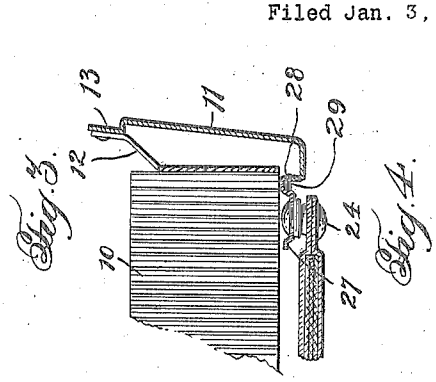


Fig. 3.

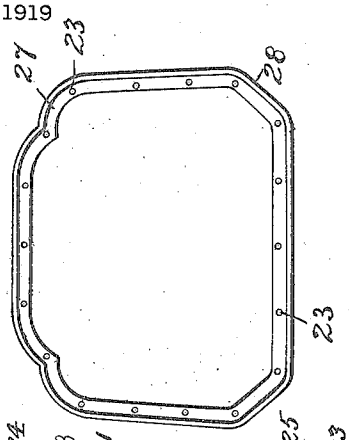


Fig. 4.

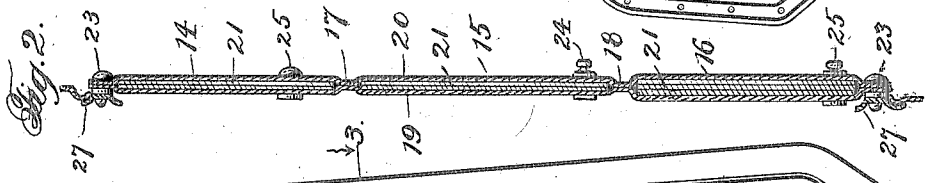


Fig. 2.

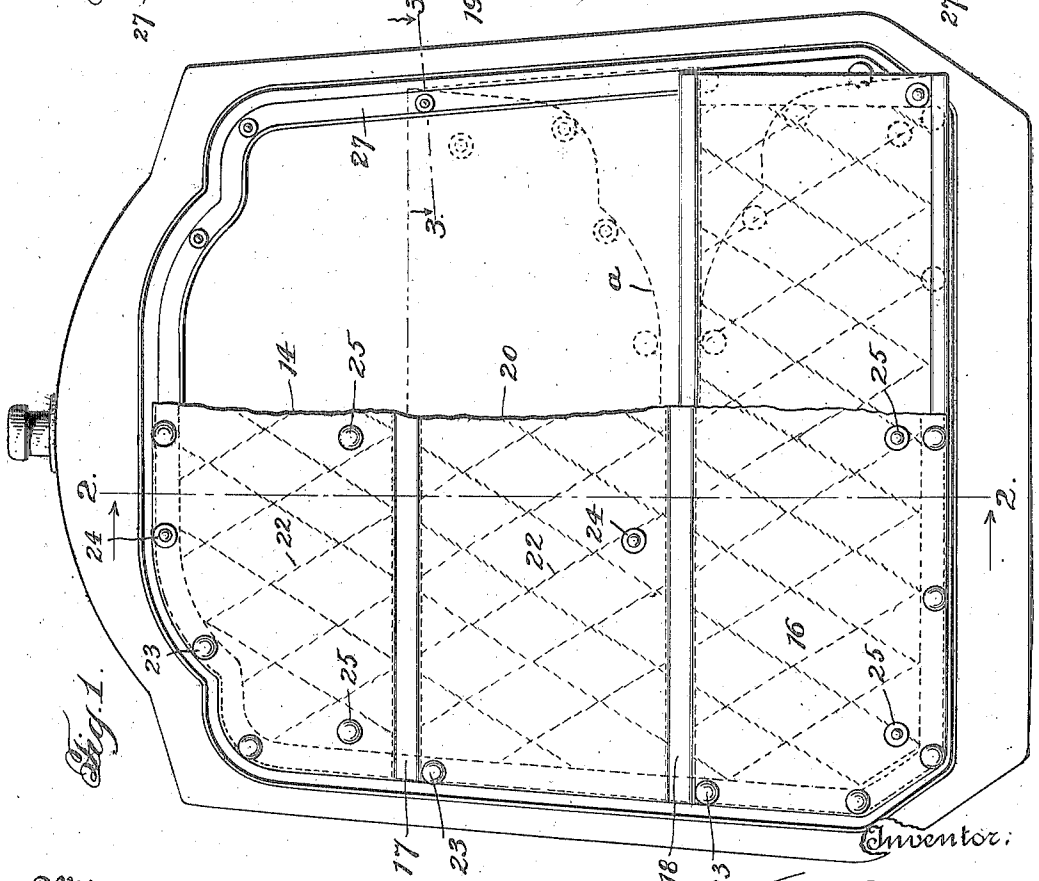


Fig. 1.

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Patented May 1, 1923. 1,453,340

UNITED STATES PATENT OFFICE.

FRANK J. DRUAR, OF DETROIT, MICHIGAN, ASSIGNOR TO PACKARD MOTOR CAR COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

ATTACHMENT FOR MOTOR-VEHICLE RADIATORS.

Application filed January 3, 1919. Serial No. 269,428.

To all whom it may concern:

Be it known that I, FRANK J. DRUAR, a citizen of the United States, and residing at Detroit, county of Wayne, State of Michigan, have invented certain new and useful Improvements in Attachments for Motor-Vehicle Radiators, of which the following is a specification.

The present invention relates to motor vehicles and more particularly to means to obstruct or reduce the circulation of air through the radiator.

The principal objects of the invention are to provide a novel form of curtain or cover for the front of the radiator and attaching means for detachably securing the curtain thereto.

Other objects and features of novelty will be apparent from the description taken in connection with the drawings in which:—

Figure 1 is a front elevation of a radiator provided with a curtain constructed in accordance with the present invention, a portion of the curtain being shown broken away and folded to illustrate the manner of varying the size of the opening in the radiator;

Figure 2 is a sectional elevation through the curtain and attaching means taken substantially on the line 2—2 of Figure 1.

Figure 3 is an enlarged sectional plan view taken substantially on the line 3—3 of Figure 1; and

Figure 4 is a front elevation of a removable frame employed for securing the curtain to the radiator.

Referring to the drawings it will be seen that the invention is illustrated in connection with a radiator of the usual type comprising a core 10 surrounded by a removable shell 11. For the purpose of securing the shell to the core, the core has the rearwardly extending fingers or tongues 12 which are bolted or otherwise fastened to the hood supporting flange 13 of the shell.

At certain times of the year it is desirable to close or reduce the size of the opening in the front of the radiator through which air passes. According to this invention, this result is accomplished by providing a curtain similar in outline to the radiator air opening and detachably securing the same at its marginal edges to the radiator. Preferably, the curtain is formed in sections flexibly connected together so that one section may be folded against an adjacent section to thereby vary the size of the air opening of the radiator.

As shown in Figure 2, the curtain may consist of the relatively thick sections 14, 15 and 16 connected by the flexible or hinge portions 17 and 18. In the embodiment shown the curtain consists of the outside fabric layers 19 and 20, with the interposed pads 21, the hinge portions being provided by omitting the padding at these portions so that the fabric layers 19 and 20 are in contact. The padding may be held in place by any suitable means as the stitchings 22. The padding also may be omitted from the marginal edges of the curtain so that the fabric layers contact to give a relatively thin part for the fasteners.

The curtain may be detachably secured to the radiator in any suitable manner but preferably snap or glove fastenings 23 are employed. As clearly shown in Figure 1, these fastenings are arranged symmetrically with respect to a central vertical line, and a fastening 23 is disposed directly below each of the hinge sections 17 and 18 at opposite sides of the curtain.

From the foregoing it will be apparent that if it is desired to open up a portion of the air passage through the radiator the upper section 14 of the curtain may be folded about the hinge portion 17 down and against the section 20 and may be secured in this folded position by snap fastenings 24. The position of this upper section in this folded location is illustrated by the dotted line *a* at the right of Figure 1. If it is desired to expose a larger portion of the air passage then the sections 14 and 20 as a unit may be folded about the hinge 18 down and against the lower section 16 of the curtain and may be secured in this folded position by the snap fasteners 25. It will be observed that each section of the curtain is detachably secured to the radiator so that a section may be unfastened therefrom and folded down as described above. For example, the section 14 may be detached from the radiator by unfastening the fasteners 23 and when folded down the remaining sections of the curtain are supported in their original positions so that they continue to close the corresponding

parts of the air passage through the radiator.

Obviously, the curtain may be fastened to the radiator in various ways. It is desirable, however, to provide a means which may be removed when the curtain is not employed. To this end, according to the present invention, a frame 27 is employed and is adapted to be positioned at the edge of the shell bounding the air passage opening. This frame is held in position by being clamped between the shell and the core and preferably the fastening is made more secure by providing a groove on one part to receive the adjacent edge of the other. Thus as clearly shown in Figure 3, the frame 27 is formed with a groove 28 to receive the adjacent edge 29 of the shell. The frame carries the portions of the fasteners which cooperate with the similarly positioned fasteners on the curtain. It will be seen that the frame 27 may be removed from the radiator merely by taking off the shell 11.

Although an embodiment of the invention has been described in detail, it is to be understood that the invention is not thus limited but includes modifications and changes which come within the scope of the appended claims.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:—

1. The combination with a motor vehicle radiator comprising a core and removable shell formed with an air opening at the front thereof; of a frame disposed between the edges of the shell bounding said opening and the core, a curtain adapted to close said opening, and means to detachably secure the curtain to said frame.

2. The combination with a motor vehicle radiator having a shell formed with an air opening in the front thereof; of a frame removably disposed at the edge of the shell bounding said opening, a curtain adapted to close said opening, and means to detachably secure the curtain to said frame.

3. The combination with a motor vehicle radiator comprising a core and removable shell formed with an air opening in the front thereof; of a curtain supporting frame clamped between the core and the edges of the shell bounding said opening.

4. The combination with a motor vehicle radiator comprising a core and a removable shell formed with an air opening in the front thereof; of a curtain supporting frame disposed at the edge of the shell bounding said opening, one of the two last mentioned parts formed with a groove to receive the adjacent edge of the other part.

5. The combination with a motor vehicle radiator comprising a core and a removable shell formed with an air opening in the front thereof; of a curtain supporting frame disposed at the edge of the shell bounding said opening, and formed with a groove to receive the said edge of the shell.

6. A curtain for closing the air opening in motor vehicle radiators comprising relatively thick sections connected by relatively thin portions whereby one section may be folded about a thin portion to lie flat against an adjacent section.

7. A curtain for closing the air opening in motor vehicle radiators provided with spaced parallel weakened portions, thereby dividing the curtain into sections, one of which may be folded about a weakened portion to lie flat against an adjacent section.

8. A curtain for closing the air opening in motor vehicle radiators comprising sections connected by a horizontally disposed weakened portion whereby the upper section may be folded about said weakened portion to lie flat against the lower section, and means to fasten the sections in folded position.

9. The combination with a motor vehicle radiator, of a curtain to close the air opening in the front thereof, and fasteners to secure the edges of the curtain to the radiator disposed symmetrically about a vertical center line through the curtain whereby a portion of the curtain may be folded over against the remaining portion and the latter will be supported by the fastenings not detached and means to detachably secure said folded over portion to the portion below the same.

10. The combination with a motor vehicle radiator, of a curtain to close the air opening in the front thereof comprising sections connected by hinge portions and detachable means to secure each section to the radiator, including a detachable fastener at each vertical edge of the curtain just below each hinge portion, whereby one section of the curtain may be detached from the radiator and folded over against another and means to secure the folded over section to the section below the same.

In testimony whereof I affix my signature.

FRANK J. DRUAR.