Nov. 24, 1931. A. J. JANSSON 1,833,424

RADIATOR MOUNTING

Filed May 25, 1928

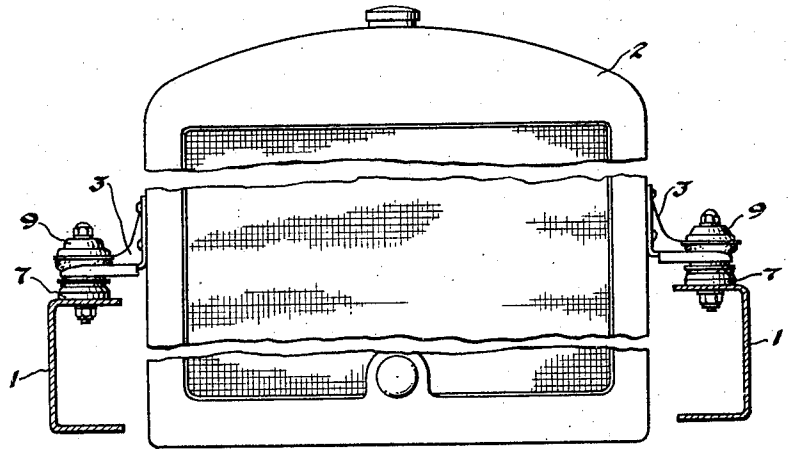


Fig. 1

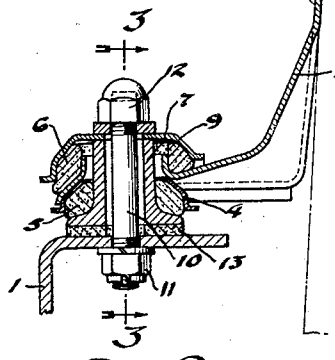


Fig. 2

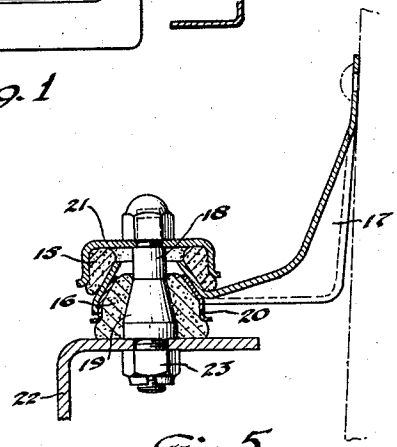


Fig. 5

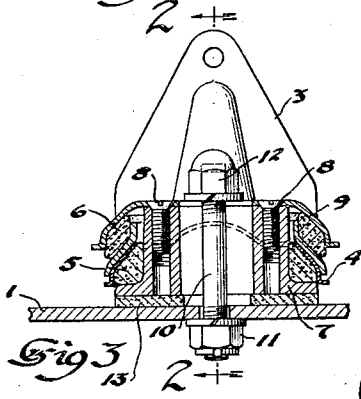


Fig. 3

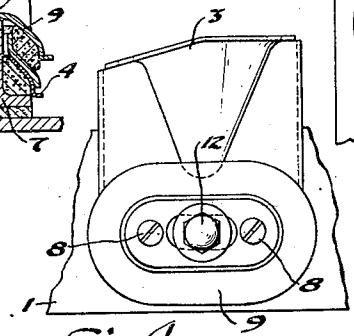


Fig. 4

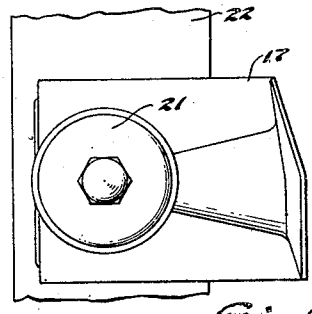


Fig. 6

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UNITED STATES PATENT OFFICE

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RADIATOR MOUNTING

Application filed May 25, 1928. Serial No. 280,534.

This invention relates to motor vehicles and more particularly to an improved type of radiator mounting.

It is one of the objects of the invention to provide a mounting for radiators or the like which will cushion shocks and strains and relieve the radiator structure from damaging stresses, vibrations and road shocks.

Another object of the invention is to provide a construction that will be simple and economical to manufacture comprising but a few parts that may be readily replaced in the event they become damaged or worn, and which may be assembled into a unitary device for removal with the radiator from the supporting frame without disturbing the relation of the mounting parts.

A further object is to provide a mounting that will facilitate the speed of assembly of motor vehicles, and which will permit a certain amount of adjustment of the radiator structure with relation to its associated parts.

Other objects and advantages will be apparent from the following specification taken in connection with the accompanying drawings in which Fig. 1 is a front elevation of a radiator mounted upon the chassis frame in accordance with the present invention.

Fig. 2 is a transverse sectional view of the mounting and is taken on line 2—2 of Fig. 3.

Fig. 3 is a sectional view of the mounting taken at right angles to that of Fig. 2, as indicated by line 3—3 of Fig. 2.

Fig. 4 is a top plan view of the mounting.

Fig. 5 is a transverse sectional view of a modification, and Fig. 6 is a top plan view of the parts shown in Fig. 5.

Referring to the drawings the numerals 1—1 represent a pair of longitudinally extending channel-shaped side members of the chassis frame on which is to be mounted the radiator 2. At each side of the radiator shell there is riveted or otherwise secured a laterally projecting bracket arm 3, having a concavo-convex portion which, together with the cupped member 4, provides conical or inclined seats on opposite sides of the bracket for the annular bodies or rings 5—6 of elastic deformable material, such as rubber or other suitable substance, having a degree of inherent resiliency to cushion or absorb shocks and strains, and thus save the radiator structure free from damaging stresses, thereby materially prolonging its life or period of usefulness. An inner sleeve member 7 projecting through the bracket arm and elastic rings serves to retain the lower ring 5 in the concave portion of the bracket, and has secured to its upper end as by screws 8 a cup-shaped retainer element 9 for the upper ring 6. It will be seen, therefore, that the cushion rings 5 and 6 are assembled as a unit with the bracket arm and may be secured on the arm prior to the final assembly operation.

The concavo-convex portion of the bracket arm, as well as the elastic rings and their retainers, are oblong or ovular in shape, and the inner sleeve 7 is provided with an elongated or oblong opening or hole through which extends a fastening stud or bolt 10 having nuts 11 and 12 threaded on opposite ends thereof to secure the bracket arm assembly in place on the chassis frame. The opening through the sleeve being of a size greater than the diameter of the bolt permits a sidewise adjustment of the radiator structure relative to the frame, both longitudinally and transversely of the vehicle, to bring the radiator and its associated parts into proper alignment one with another. In order that the radiator may not be accidently misplaced after its proper position is once established and the nuts drawn up, a washer or strip 13 of friction lining may be inserted between the bottom of the sleeve and the top flange of the chassis frame member, to resist any tendency for the parts to move.

In Figs. 5 and 6, where a slightly modified form of the invention is illustrated, the elastic rings 15 and 16 are located on opposite sides of a circular concavo-convex portion of the bracket arm 17 and are held in place by a bolt 18 having a conical or tapered enlargement 19 to hold the lower-most ring 16 in the cupped member 20 fitted into the concavity of the bracket arm, the upper end of the bolt carrying a retainer cup 21 for the upper ring 15. A screw threaded extension of the bolt projects through the top flange of the

chassis frame member 22, and has threaded thereon a fastening nut 23 to removably secure the mounting assembly in place on the frame.

From the above description it will be evident that there is provided a mounting possessing the particular advantages before enumerated as desirable. While the description has been more or less specific, it is to be understood the invention is not limited to the exact details shown, but that such modifications may be made as come within the scope of the appended claims.

I claim:

1. The combination with a radiator and a support, of a bracket arm having a concavo-convex portion affording tapered seats on opposite sides thereof, annular bodies of elastic deformable material seated against said concavo-convex portion, a pair of retainers for said elastic bodies, one of which has an extension projecting through an opening in said arm and to which the other retainer is secured, and a fastening stud extending through an elongated opening in said retainers to secure said radiator to the support, said elongated opening permitting adjustment of the position of said radiator relative to the support.

2. The combination of claim 1 together with a strip of friction material interposed between the support and adjacent retainer.

3. The combination with a support and a body to be supported, of means to mount the body on said support including a body part having a concavo-convex portion affording conical seats on opposite sides thereof, a pair of elastic deformable rings seated against said concavo-convex portions, a sleeve extending through said body part and rings and forming a retainer for one of the rings, a retainer for the other ring secured to said sleeve to afford a unitary assembly of the parts, and a fastening stud extending through said sleeve and being of a lesser diameter than the opening in the sleeve, whereby sidewise adjustment of the position of the parts may be effected.

4. The structure of claim 3 and a piece of friction material interposed between the sleeve and support.

5. In a cushion unit for connecting two parts, an apertured member for attachment to one part having a concavo-convex marginal flange, a cushion ring positioned on the concave underside of the flange, a second cushion ring surrounding the convex upper side of the flange, a member extending thru the aperture in the first mentioned member, and having portions engaging the said cushion rings to maintain them in contact with the tapered surfaces on opposite sides of the marginal flange, and an attachment device extending through an aperture in the last mentioned member to removably secure the assembly to the other of the parts to be connected.

6. A cushion mounting unit comprising inner and outer members adapted respectively for connection with two parts to be joined, the outer member including two portions connected one with the other in spaced relation, and the inner member including a relatively thin wall portion of concavo-convex shape which is interposed between said spaced portions of the outer member and provides tapered seats on its opposite concave and convex surfaces, rings of elastic material interposed respectively between adjacent surfaces of the concavo-convex portion and one portion of the outer member and between the adjacent surfaces of the concavo-convex portion and the other portion of the outer member, one of the rings extending into the concavity of the concavo-convex portion and seating on the tapered inner surface thereof and the other ring seating on the tapered outer surface of the concavo-convex portion, and means independent of the connection between said portions of the outer member to detachably secure the outer member to one of the parts to be connected.

7. A cushion mounting unit for connecting two parts including an inner relatively thin walled member of substantially concavo-convex shape to provide tapered surfaces on opposite sides thereof adapted for attachment to one of the parts, elastic deformable material positioned on opposite concave and convex sides of said member, an outer member maintaining the elastic deformable material in contact with the tapered surfaces of the inner member and holding the mounting elements in assembled relation, and means associated with the outer member for detachably connecting the unit with the other of the parts to be connected.

8. A resilient connection between two members including a lateral projection associated with one of the members and provided with a frusto-conical relatively thin wall portion which provides outwardly inclined surfaces on the inner and outer sides thereof, resilient deformable material on opposite sides of said frusto-conical wall portion and in engagement with both inclined surfaces, a retainer extending from one side to the other of said frusto-conical portion and engaging the resilient material on both sides of said portion to afford a unitary assembly of the parts in which the projection is yieldingly suspended through the resilient material in the retainer, and by reason of its outwardly inclined contact surfaces is capable of relative movement in all directions, and means to detachably secure the retainer to the other of said members.

In testimony whereof I affix my signature.

AXEL J. JANSSON.