Sept. 24, 1929. H. S. GOLDEN 1,729,381

RUBBER MOTOR SUPPORT

Filed March 29, 1926 2 Sheets-Sheet 1

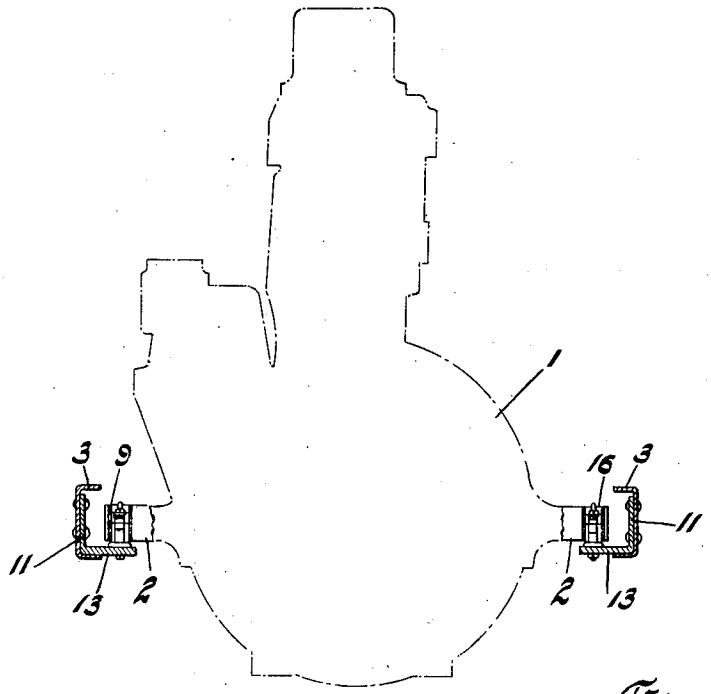


Fig. 1

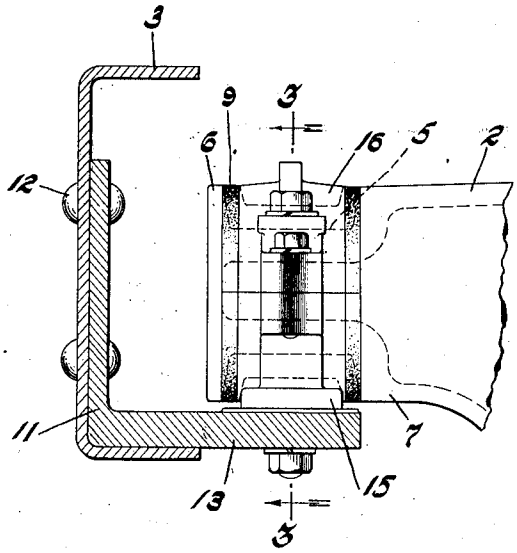


Fig. 2

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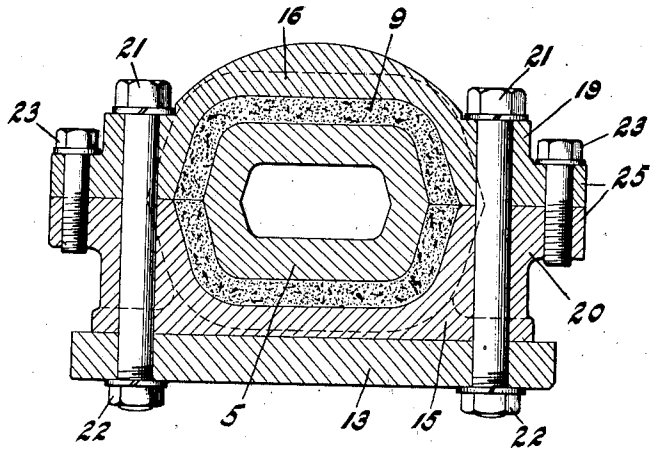


Fig. 3

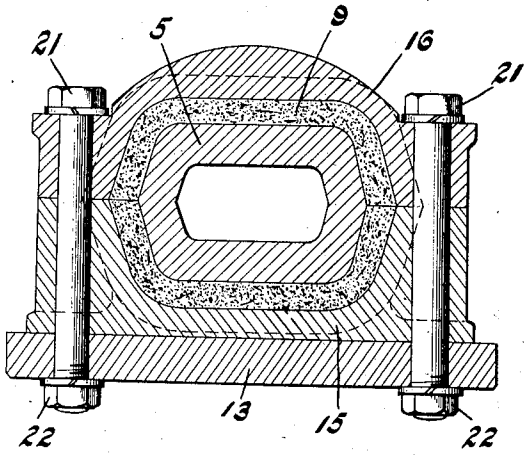


Fig. 4

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UNITED STATES PATENT OFFICE

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RUBBER MOTOR SUPPORT

Application filed March 29, 1926. Serial No. 98,269.

This invention relates to a motor support—that is, a means for supporting an explosive motor from the frame of a vehicle chassis.

The vibrations of an explosive motor may be communicated through the frame, which supports the motor, to the body carried by the frame to the great discomfort of the passengers. Also the distortion of the frame as the vehicle travels rough roads is transmitted to the motor through the mounting of the motor on the frame. Metallic connections between the motor and frame furthermore, are productive of much objectionable noise. Various means have been resorted to to absorb these undesirable movements and to prevent the noise, by placing shock absorbing instrumentalities between the frame and the motor. It is to the provision of such an instrumentality that this invention relates.

An object of the invention is to provide a resilient support between the motor and the frame.

As a further object the invention aims to provide such a support yieldingly active in various directions.

A further object is to accomplish the desired results by a structure which is comparatively simple and easily applied. In a specific form the invention makes use of means whereby the resilient member may be incorporated before the assembly of the motor on the vehicle frame. While it is the intention, primarily, to apply the invention at the rear end of the motor, it will be obvious that the invention is capable of use at the front end of the motor whether the front end be supported at a single point, as in the usual three point suspension, or whether there be two points of suspension at the front corresponding to the two at the rear.

In the drawing:

Figure 1 represents an end elevation of a motor showing its support on the side bars of the frame.

Figure 2 is a similar end elevation of the supporting device on a larger scale.

Figure 3 is a section on line 3—3 of Figure 2.

Figure 4 is a similar section on the same line but of a modified form.

Referring by reference characters to the drawing, numeral 1 represents a motor with its crank case and cylinder block. The parts of the motor are not concerned with this invention and need no further description. Extending laterally from the rear end of the motor at each side is an arm 2. This arm 2 is to be supported by the side frame member 3 of the vehicle chassis.

To effect the support of arm 2 upon the frame member 3 the arm is provided with a reduced end as at 5, of non-circular shape. This arm terminates in a flange 6. Surrounding the reduced part 5 between the larger arm portion 7 and the flange 6 is a resilient member 9 of rubber or the like. This is also of non-circular shape and conforms to the shape of the motor arm 5.

Preferably, and as shown in the drawing, the rubber cushion is in two parts, an upper part engaging the upper portion of the reduced end of the motor arm and the lower part engaging the lower portion of said reduced end. By this means assembly, removal and replacement is conveniently provided for.

Secured to the channel frame member 3 is an angle plate 11, rivets or the like 12 being made use of to fasten the parts together. On the horizontal flange 13, of the angle plate, the motor arm 2 is to be supported. A bracket 15 is constructed with a lower face to rest upon the plate 13. Above its face the bracket is of substantially elongated U shape of such size and shape as to engage and conform to the lower part of the resilient cushion 9. To complete the enclosure of the cushion is a cap 16 co-operating with bracket 15. The cap is likewise of elongated U shape and engages the edges of bracket 15, as clearly shown in the drawings.

In Figure 3, which shows the preferred form of bracket and cap, it will be observed that there are extensions 19 and 20 on the cap and bracket respectively. Through these extensions are passed bolts 21, which bolts also pass through the plate 13 and are secured by nuts 22. It will be seen, also, that the ex-

tensions 19 and 20 on Figure 3 are further extended as at 25 to receive bolts 23, which bolts are threaded into position to hold the cap and bracket together over the rubber cushion. By means of the extensions 25 and bolts 23 it is possible to assemble the rubber cushion with the bracket and cap upon the arm of the motor before assembling the motor on the frame.

In a somewhat simplified form (Figure 4) the extensions 25 and the bolts 23 are omitted. In this modification the cushion and the bracket are placed in position on the motor arm and the bracket then positioned on the plate 13. Thereafter the cap 16 is placed in position and the bolts 21 applied to secure the parts together. This second form may be at times preferred because of its simpler bracket and cap and because it makes use of but one set of bolts, but, in general, the form of Figure 3 will be preferred which, as explained above, permits the assembly of the cushion before the motor is attached to the frame.

By the use of the cushion mounting, as explained above, shocks, jars and vibrations are absorbed and noise is eliminated.

I claim:

1. Means for mounting a motor, or the like, on a frame comprising a plate secured to and inwardly extending from said frame, an arm directed away from said motor, the arm having a reduced portion and a terminal flange, a resilient cushion surrounding said reduced portion, a bracket and cap housing said cushion, means to secure said bracket and cap to said plate, and fastening means for securing said bracket and cap together independent of the means for securing said parts to said plate, whereby upon releasing of said means for securing said parts to said plate said bracket and cap may remain in fixed relation to each other and to the motor arm and cushion.

2. Means for attaching a motor to its frame support, including a motor arm having a reduced non-circular portion and a terminal flange, a non-circular resilient cushion surrounding said reduced portion, a bracket and a cap fitting around said cushion and received within said reduced portion of said motor arm and means to attach said bracket and cap together and to said frame member.

3. In combination, in a motor vehicle, a side frame member, a motor having a transversely directed arm, the end portion of the arm having a part of reduced diameter and a terminal flange, a resilient deformable cushion surrounding the reduced part of the arm and a bracket and cap housing the cushion positioned within the reduced portion of said motor arm and secured to the frame.

4. In a rear motor support for motor vehicles, a frame, a plate secured to the frame and directed inwardly thereof, a motor having a laterally directed arm, the arm having a portion of reduced dimension and of non-circular shape, the arm terminating in an enlarged flange, a resilient cushion surrounding said reduced portion of said arm, a bracket and a separable cap means to secure said bracket and cap together, and independent means for securing said bracket and cap to said plate

5. Means for mounting a motor or the like between the frame bars of a vehicle chassis comprising supporting members secured to and projecting inwardly from said frame bars, motor arms extending from said motor toward said frame bars, said motor arms having reduced portions, a divided yielding cushion seated in each of said reduced portions, a bracket and cap encircling each of said cushions and means securing the said bracket and caps together and to said frame supports

6. The invention set forth in claim 5, said brackets and caps being also positioned within said reduced portions of said arms.

In testimony whereof I affix my signature.

HARRY S. GOLDEN.