

PATENT SPECIFICATION



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311,084

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PROVISIONAL SPECIFICATION.

Wheel Mountings for Motor Vehicles.

We, THE ALVIS CAR & ENGINEERING COMPANY LIMITED, a British Company, and GEORGE THOMAS SMITH-CLARKE, a British Subject, both of Holyhead Road, Coventry, Warwickshire, do hereby declare the nature of this invention to be as follows:—

This invention relates to wheel mountings for motor vehicles, of the kind in which a vertical stem on a short wheel axle is mounted endwise free in a bearing at the end of an axle beam, and a housing on the latter contains a coil suspension spring bearing on the short axle. The object of the invention is to provide a construction in which an effective damping of the spring movements can be simply and easily obtained, and, if desired, for the pivotal movements of the wheel, if this is used for steering.

According to this invention, there is interposed between the stem and the wall of the housing a damping friction member.

The damping member may be constituted by a relatively wide split ring carried by a disc and adapted either by its own resilience or by supplementary adjustment means to engage frictionally the sides of the housing, or vice versa.

In one method of carrying out the invention, the housing is of cylindrical form, and the part of the vertical stem adjacent the wheel axle is enlarged to fit slidably in the housing. Between an internal shoulder formed by a radial flange in the housing and the shoulder due to the enlargement of the stem is mounted a coil suspension spring.

The stem extends beyond the flange in the housing and carries a disc around the

periphery of which is mounted a split spring ring. The latter bears frictionally upon the sides of the housing by its resilient outward pressure and may be considerably wider than the disc and have internal radial flanges to engage the sides of the disc and thus be located upon it.

If the road wheel pivots on the stem for steering purposes the disc (and with it the friction ring also) may be angularly fixed on the stem so that frictional damping may be applied to the pivotal movements of the stem as well as to its vertical movements.

On the other hand, if it is not desired to damp the steering, the disc may be mounted to rotate on the stem by means of plain or antifriction bearings.

Alternatively, it may be desired to damp the steering independently of the vertical damping movements, in which case a separate frictional engagement may be provided between the disc and stem.

Any preferred means may be employed to adjust the frictional effects. Thus there might be an adjustment at the split of the ring to vary its expansion, or if preferred the ring might be in segments acted upon by coil springs housed in the disc to exert an outward thrust.

The invention thus provides simple and effective means for damping the movements of the suspension spring, and if necessary the pivotal movements also if the road wheel is a steerable one.

Dated this 1st day of May, 1928.

ERIC W. WALFORD,

Fellow of the Chartered Institute of Patent Agents,

19, Hertford Street, Coventry,
Agent for the Applicants.

COMPLETE SPECIFICATION.

Wheel Mountings for Motor Vehicles.

We, THE ALVIS CAR & ENGINEERING COMPANY LIMITED, a British Company, and GEORGE THOMAS SMITH-CLARKE, a British Subject, both of Holyhead Road, Coventry, Warwickshire, do hereby declare the nature of this invention and

[Price 1/-]

in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to wheel mountings for motor vehicles, of the kind in

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which a vertical stem on a short wheel axle is mounted endwise free in a bearing at the end of an axle beam, and a housing on the latter contains a coil suspension
 5 spring bearing on the short axle. The object of the invention is to provide a construction in which an effective damping
 10 of the spring movements can be simply and easily obtained, and, if desired, for the pivotal movements of the wheel, if
 15 this is used for steering.

According to this invention, there is interposed between the stem and the wall of the housing a motion damping member.

15 The damping member may be constituted by a relatively wide split ring carried by a disc on the stem and adapted either by its own resilience or by supplementary
 20 frictionally adjustment means to engage frictionally the sides of the housing, or vice versa.

In the accompanying drawings,

25 Figure 1 is a fragmentary sectional elevation showing the invention as applied to the front wheels of a vehicle, one wheel only being illustrated,

Figure 2 is a similar view, to a larger scale, of a part of Figure 1 showing a modification, and

30 Figure 3, to a still larger scale, is a similar view of a further modification.

Like numerals indicate like parts throughout the drawings.

35 In the arrangement shown in Figure 1, the housing 2 is of cylindrical form, and the lower part of the vertical stem 3 adjacent the wheel axle 4 is enlarged at 5 to fit slidably in the housing. Between an internal shoulder 6 formed by a radial
 40 flange 7 in the housing 2 and a shoulder 8 constituted by the base of an annular recess 9 between the stem and the enlargement 5 is mounted a coil suspension spring
 45 10.

The stem 3 extends beyond the flange 7 and carries a disc 11 around the periphery of which is mounted a split spring ring 12. The latter bears frictionally upon the interior 13 of the housing by its resilient
 50 outward pressure and may be considerably wider than the disc and have internal radial flanges 14 to engage the sides of the disc and thus be located upon it.

If the road wheel 15 pivots on the stem 55 for steering purposes the disc (and with it the friction ring also) may be angularly fixed on the stem, as by keying as shown at 16, Figure 2, and the ring fixed to the disc so that frictional damping may be
 60 applied to the pivotal movements of the stem 3 as well as to its vertical movements.

On the other hand, if it is not desired to damp the steering, the disc may be
 65 mounted to rotate on the stem by means

of plain or antifriction bearings such as the balls 17 in Figure 3.

Alternatively, it may be desired to damp the steering independently of the vertical damping movements, in which
 70 case a separate frictional engagement may be provided between the disc and stem.

Any preferred means may be employed to adjust the frictional effects. Thus there might be an adjustment at the split
 75 of the ring to vary its expansion, or if preferred the ring might be in segments, as in Figure 3, and acted upon by coil springs 18 housed in the disc 11 to exert an outward thrust.

The invention thus provides simple and effective means for damping the movements of the suspension spring, and if
 80 necessary the pivotal movements also if the road wheel is a steerable one.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we
 85 claim is:—

1. A wheel mounting for a motor vehicle, comprising a vertical stem on a short wheel axle mounted endwise free in a bearing at the end of an axle beam, a
 90 housing on the latter containing a coil suspension spring bearing on the short axle, and a motion damping member interposed between the stem and the wall of the housing, for the purpose described.

2. A wheel mounting as claimed in Claim 1, in which the damping member is a relatively wide split ring carried by a disc attached to the stem and is adapted
 95 frictionally to engage the wall of the housing by its own resilience or by supplementary adjustment means, substantially as described.

3. A wheel mounting as claimed in Claim 1 or Claim 2, in which the housing is divided by a radial flange through which the stem projects, and in one part
 100 of the housing is mounted a coil suspension spring and in the other the damping member, substantially as described.

4. A wheel mounting as claimed in Claim 2, in which the split ring is wider than the disc and is provided with
 105 internal radial flanges adapted to engage the sides of the disc, for the purpose described.

5. A wheel mounting as claimed in any of the preceding claims, in which the disc is rotatably mounted on the stem, for the
 110 purpose described.

6. A wheel mounting as claimed in Claim 1, in which a torsion damping member is interposed between the stem and the wall of the housing, for the purpose
 115 described.

7. A wheel mounting as claimed in any 120

of Claims 1—4 or Claim 6, in which the damping member comprises a disc angularly fixed on the stem and a friction ring fixed to the disc, for the purpose described. 5

accompanying drawings, or as shown modified in Figure 2 or Figure 3. 10

Dated this 18th day of January, 1929.

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8. The complete wheel mounting for a motor vehicle substantially as described or as illustrated in Figure 1 of the

[This Drawing is a reproduction of the Original on a reduced scale.]

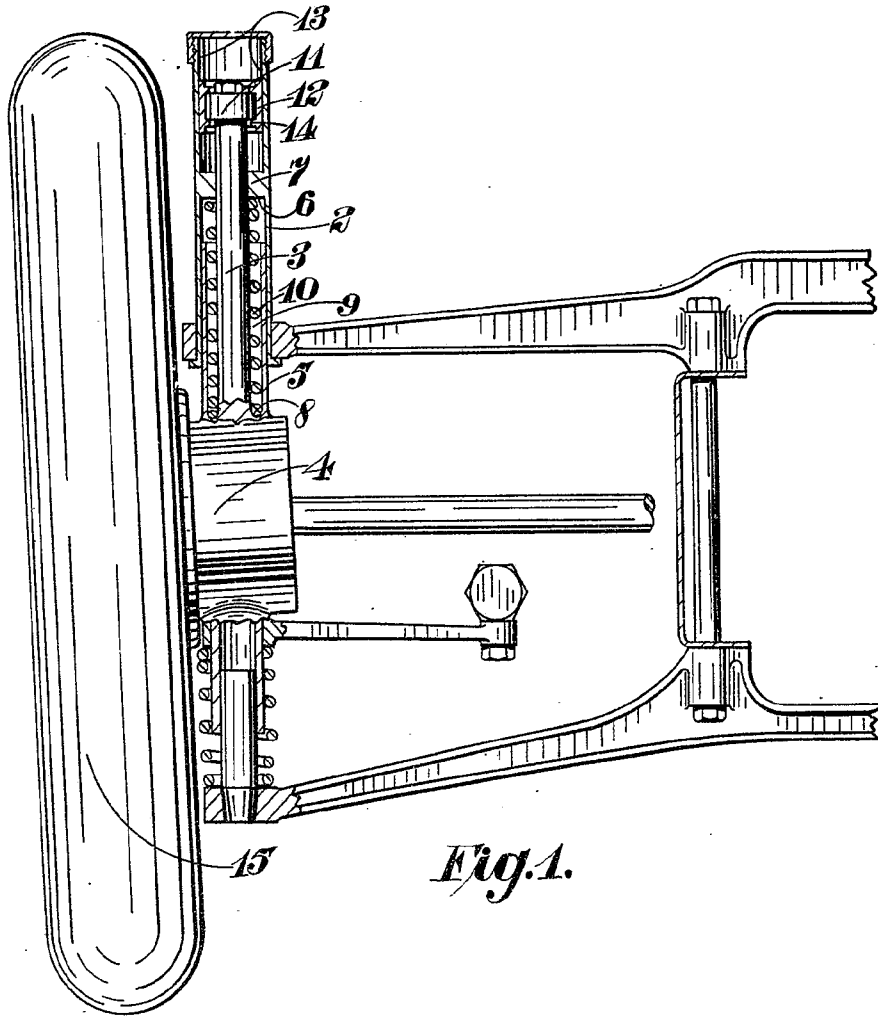


Fig. 1.

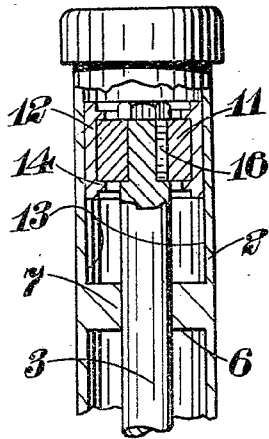


Fig. 2.

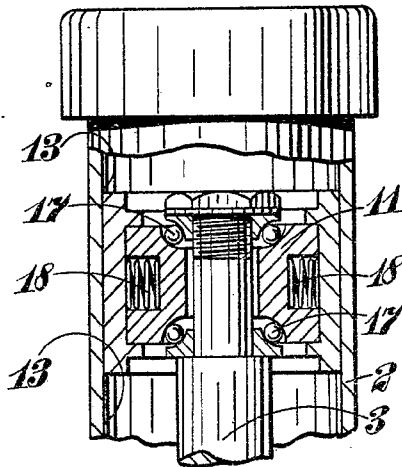


Fig. 3.