[Second Edition.]

PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Improved Means for Mounting Steering Wheels of Motor Vehicles.

I, VINCENZO LANCIA, trading as LANCIA & Co., of 99, Via Monginevro, Turin, Italy, a subject of the King of Italy, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to improved means for mounting steering wheels of motor vehicles in which the said steering wheels are mounted by means of side members of a transverse frame acting as an axle for the vehicle.

According to this invention each stub axle is mounted on a vertical member enclosed with resilient suspension means inside a tubular post constituting said side member, said member having on its outer side an opening permitting of vertical displacements and steering deviations of the said stub axle.

In the annexed drawings is illustrated by way of example a construction of this invention, and

Figures 1 and 2 show respectively in front view and in plan view one half of the front end of a motor-car in which the steering wheels are mounted in accordance with this invention;

Figure 3 shows in central section and to larger scale the supporting means for a wheel;

Figure 4 is a sectional plan on the line 4—4 of Figure 3.

As shown by Figures 1 and 2, each side of the transverse front frame intended to support a wheel and fastened on the structure 1 of the car consists of a bottom cross-bar 2 which, by means of socket 3, is connected with the bottom end of a vertical upright 4, the top end of the latter being connected by means of socket 15 with a stay 5 which is fastened on the frame 6 embracing the radiator.

Each side upright 4 consists of a tubular member having both its ends encircled by collars of sockets 3 and 15 and provided on its outer side with an opening 20 which extends over nearly half the bottom of the upright. A hollow bar 23 is mounted to slide within the upright 4 and is concentric therewith, for example, by means of two end sleeves 21 and 22, said hollow bar having its bottom closed by a plug 24, providing a liquid shock absorber in cooperation with a piston 25 connected by rod 26 with a top cap 27 fastened on the upright.

The bar 23 may also be constructed and mounted in a manner different from that represented, it need not necessarily form a liquid shock absorber in combination with the piston 25. The essential point is that by means of the said bar the collar 28, which carries the stub axle may be mounted within the upright 4, so as to rotate about the axis of the said upright and move resiliently along the said axis.

In the construction illustrated the collar 28 is placed on a sleeve 30 intermediate a flange 31 and an abutment ring 32, and the sleeve 30 is made solid with the hollow bar 23 which is thus caused to move vertically together with collar 28 and pivot 29 for the wheel.

The bottom end of a cylindrical coil spring 34 bears on the ring 32 and on a co-operating abutment of sleeve 30, the top end of the spring 34 abutting on a flange 35 of sleeve 22. The bottom end of a further cylindrical coil spring 36, bears on the top edge of the sleeve 30, said spring engaging the sleeve 22 near the end of the stroke of the hollow bar 23, whose downward stroke is further resiliently restricted by a spring 37 carried by the bottom of the socket 3.

The resilient mounting of the collar 28 with respect to the upright 4 may also be secured in a different manner. In any case the stub axle 29 carrying the wheel has the necessary freedom for movement both in vertical direction and in the two opposed directions of oscillation around the upright axis, because said stub axle passes through the opening 20 provided in the upright 4.

The arrangement described in which the guide for the wheel (formed by the bar 23) is comprised within the upright of the transverse frame, renders the construction very strong as a whole, and the lateral stresses which are produced when

the guide for the wheel is mounted at the side of the upright of the front frame are eliminated.

Further, the fact that the hollow bar immovably fixed in the vertical direction with the pivot collar is mounted in a sleeve 21 which extends from the stationary base of upright 4 within a portion of the sleeve 30 on which is loosely mounted the collar 28 of the stub axle secures the advantage that the lower sliding surface of the bar 23 is prevented from being soiled by mud, in spite of the location of this member.

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

1. Means for mounting steering wheels of motor vehicles by means of side members of a transverse frame acting as an axle for the vehicle, in which each stub axle is mounted on a vertical member enclosed with resilient suspension means inside a tubular post constituting said side member and having on its outer side member an opening permitting of vertical displacements and steering deviations of the said stub axle.

2. Means according to Claim 1, in which to prevent the sliding surfaces from being soiled by mud, dust and the like, said stub axle is mounted on the said vertical member by means of a sleeve extending over a guide for said vertical member, the said member being always protected by said sleeve during its vertical displacements.

3. Means for mounting steering wheels in motor vehicles substantially as described and illustrated.

Dated this 27th day of June, 1928.

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2nd Edition

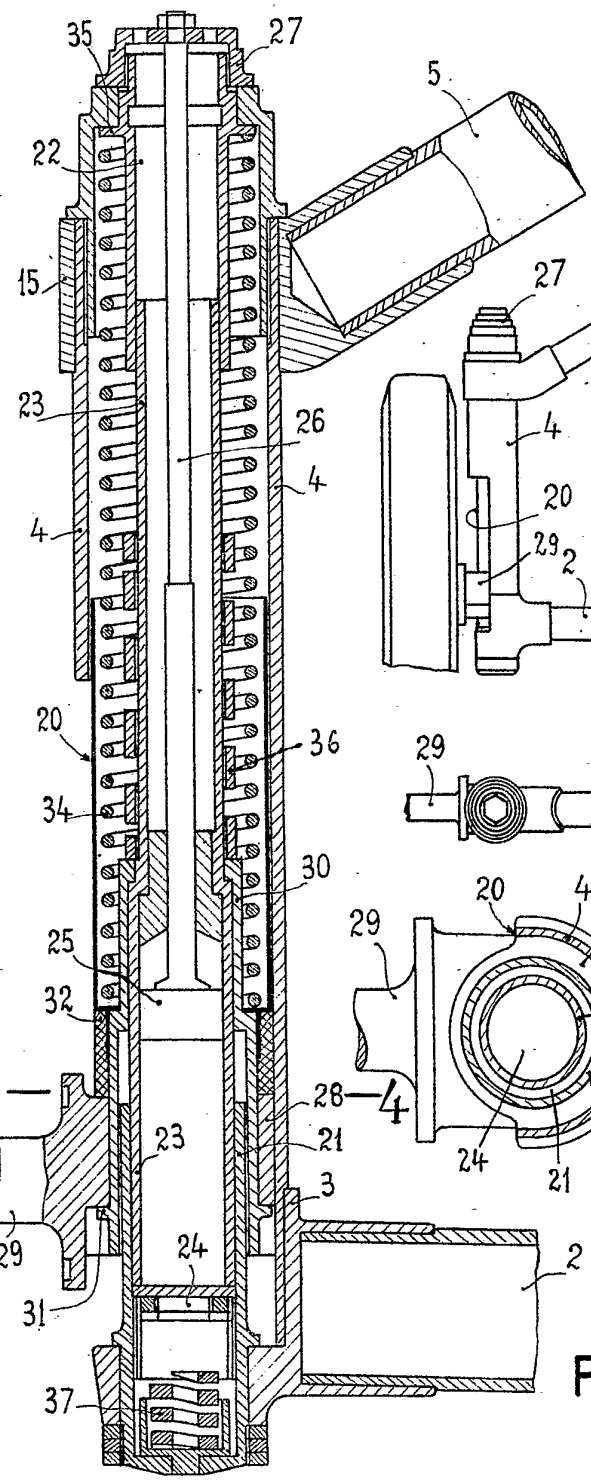

Fig.3

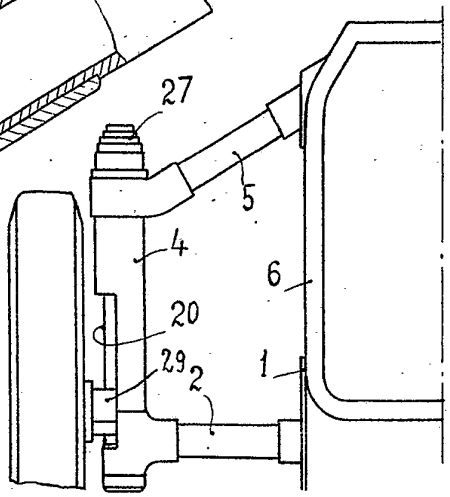

Fig.1

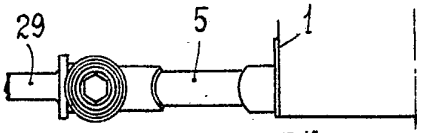

Fig.2

Fig. 4

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