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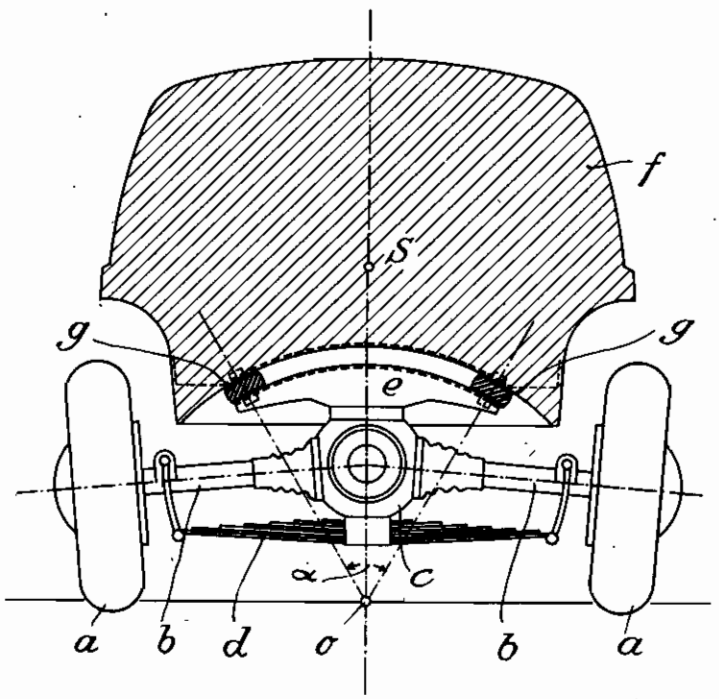

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MOVABLE CONNECTION OF A VEHICLE BODY WITH THE CHASSIS OR AN AXLE AGGREGATE

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The present invention relates to a movable connection of the vehicle body with the chassis or an axle aggregate of a vehicle.

Motor vehicles are known already in which the car body is resiliently connected to the chassis or to the axle aggregates in such a manner that the car body may oscillate with regard to the chassis or to the vehicle axles about a longitudinal axis of rotation arranged in the height of the resilient bearings or above the road. Hereby, particularly in connection with oscillating axles, more especially with oscillating half axles which strongly alter the gauge, rocking phenomenons, due to transverse shocks transmitted to the car body and occurring in the axle joints, may be produced which are the stronger, the higher the longitudinal axis of rotation is arranged and the nearer it is positioned to the centre of gravity of the car body. This phenomenon is based on the fact that the lever arm of the inertia forces acting in the centre of gravity is not long enough to be able to sufficiently yield in a lateral direction on transverse shocks occurring at the axle aggregate or at the chassis.

These drawbacks are obviated by the present invention by positioning the centre of the gravity of the body and the longitudinal axis of rotation at least approximately in a vertical plane, the axis being outside the centre of gravity. The axis of rotation is determined by the movable connection between the body and the chassis or the axle aggregate or aggregates (rest of vehicle) respectively. The axis of rotation is preferably positioned substantially in the height of the road. The oscillation phenomenons occurring at the car body hereby are reduced to a minimum. The invention may be employed in connection with front axles and rear axles is, however, particularly adapted for use in connection with the latter or with both. Also more than two axle aggregates and also one axle aggregate (trailer) may be provided, the invention being applied to one, some or all aggregates.

Preferably resilient bearings, for instance rubber bearings, are provided which besides allowing principally a resiliency to and fro from the longitudinal axis, simultaneously allow a resiliency into an other, some or all other directions. Furthermore pneumatic devices of rubber may be provided or pneumatic devices of resilient metal or guided coiled springs. The two latter constructions have the drawback that metallic contact will take place and therefore undesirable noises, the last mentioned construction has the additional drawback that there is resiliency in only one direction.

Moreover, it has been proved that the damping of transverse shocks and the exclusion of rocking phenomenons at the car body are the more effective, the lower the resilient bearings are arranged, i. e. the higher the centre of gravity of the car body is situated above the resilient bearings and, furthermore, the larger the angle is which is formed by the middle axes of the bearings arranged at both sides of the longitudinal middle plane of the vehicle, said middle axes being determined by the direction of smallest elasticity, the longitudinal axis of rotation of the car body being determined by the point of intersection of said middle axes of the bearings. This angle preferably amounts to at least 60° if possible, however, to 90–120° or more.

In the accompanying drawing one construction according to the invention is diagrammatically shown by way of example.

The rear wheels *a* are mounted upon oscillating half axles *b* which are linked to the casing *c* of the differential gear and the shocks of which are absorbed by a transverse leaf spring *d* (or unguided coiled springs) fixed to the casing. The upper surface of the casing *c*, serving as supporting body for the oscillating half axles, is provided with a curved bearing member *e* upon which the car body *f* is mounted by means of two or more plate- or ledge-like rubber buffers or rubber bearings *g*, extending in the longitudinal direction of the vehicle and arranged at both sides of the longitudinal centre plane of the vehicle spaced in as large a distance from each other as possible. The rubber buffers or rubber bearings *g* are arranged between the bearing member *e* and the car body in such a manner that the directions of their smallest elasticity intersect each other in a point **0** upon the road under an angle α of between 60° and 90°. The centre of gravity of the body is situated above the rubber bearings *g*.

A similar arrangement could also be provided for the front axles. However, the invention is of particular importance for gauge altering oscillating half axles. Moreover, the rubber bearings could be arranged between the car body and the chassis carrying the axles instead of between the axle aggregate or aggregates and the car body. Eventually the springs, for instance coiled springs, serving to absorb shocks acting upon the wheels, could bear against the car body.

Furthermore, the point **0** could also be situated below or above the plane of the road. Moreover, the rubber bearings could be constructed in any other desired manner, for instance so that a circular rubber plate extending over the entire bearing surface is interposed between the bearing member *e* and the car body. The construction shown, however, results in a particular favourable absorption of all forces and vibrations.

The rubber bearings may be constructed as rubber-metal-members or may be connected in any other suitable manner to the parts to be united.

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