

# PATENT SPECIFICATION



Convention Date (France): Aug. 6, 1924.

238,236

Application Date (in United Kingdom): Aug. 5, 1925. No. 19,760 / 25.

Complete Accepted: March 11, 1926.

## COMPLETE SPECIFICATION.

### Improvements in or relating to Suspension Devices for Endless Track Vehicles.

I, ADOLPHE KEGRESSE, of 48, rue du Théâtre, Paris, France, a citizen of the French Republic, do hereby declare the nature of this invention and in what

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

This invention relates to suspension devices for endless track vehicles.

10 Suspension devices for endless track vehicles are known having two sets of springs, those of lesser power connecting the rollers of the track to a carriage which is in turn either connected by springs

15 of higher power to the frame or this carriage is connected to the supporting axle for the driving wheels of the endless track, which axle is supported on the frame by a spring.

20 The suspension device according to this invention is characterised by the combination of two sets of springs, one of which is interposed between the chassis or frame of the vehicle and the single

25 trailing or carrier axle (which carries the whole of the endless track mechanism) and the springs of which are powerful enough to damp or absorb heavy jolts or shocks, while the other one, interposed

30 between the single trailing carrier axle and the rolling under body, is constituted by weak springs adapted to damp or absorb light jolts or vibrations, the ratio between the tensions of the said two sets

35 of springs being such, however, that the first one comes into play before the second one reaches its resiliency limit, so that, within limits, the action of the two sets of springs may be added together.

40 In order to make the invention more clearly understood, a construction is illustrated, by way of example in the accompanying drawings, in which:—

Figure 1 is an elevation of an endless

track device equipped according to this invention.

Figure 2 is a plan view of the same.

In both figures the same reference numerals denote the same parts.

1 is the chassis of the vehicle, A and B denote the two pulleys (drive and guide) on which is mounted the endless track C (in the drawing the upper part of said

endless track is cut off to reveal the suspension parts).

On the chassis 1 of the vehicle are secured on either side springs 2 of any type currently used in motor car construction. Said springs 2 constitute the first set of springs, sufficiently powerful to ensure damping or absorbing of heavy jolts or shocks.

3 denotes the single trailing or carrier axle of the endless track, said axle being supported in the ordinary way by the springs 2.

Between said axle 3 and the underbody rollers is interposed a second resilient device purposed, as hereinbefore explained to damp or absorb light jolts and the power of which is established according to the above set forth considerations. In the example shown, this device is constituted by a rigid beam 4 linked on axle 3 and by coil springs 5 bearing on the beams 6 which connect the rollers 7 with the under body.

Figure 2 shows a portion of the beam 4 cut off so as to reveal the parts located underneath.

Obviously the resilient device formed by the beams 4 and 6 and spiral springs 5 may be replaced by any other analogous or similar resilient device and especially by plate springs such as described in French Patents Nos. 543,514 and 561,250, for instance, or by springs of any other type.

Similarly, springs 2 may be replaced by spiral springs or by a resilient device of any other type suitable to ensure suspension of the trailing axle.

- 5 Furthermore, the respective functions of the combined two resilient devices may be inverted, providing, for instance, the resilient device interposed between the chassis and the trailing axle of restricted  
10 power to damp or absorb light jolts while making the device comprised between the trailing axle and the rollers of the power required to damp or absorb heavy jolts and shocks, the ratio between the powers  
15 of the two devices always being so determined as to permit the effects of the said two devices to be added together within certain limits.

- 20 The device forming the subject of this invention offers the advantage of materializing the conditions required for high speed vehicle propelling.

- Persons skilled in the art are, of course, aware that one of the conditions governing the imparting of high speeds to any  
25 vehicle is that the weight of non-suspended parts should be minimized. Due to the double suspension effected by this invention the weight of non-suspended  
30 parts is materially and substantially reduced.

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

1. A resilient suspension device for endless track vehicles with a single carrier axle, characterised by the combina-

tion of two resilient suspension devices of 40 different power, one of said devices being interposed between the vehicle chassis or frame and the single trailing or carrier axle, which carries the whole of the endless track mechanism, and being of sufficient 45 power to damp heavy jolts and shocks, while the second device, interposed between the single trailing axle and the rolling underbody is made lighter than the first but of enough power to 50 damp or absorb lighter jolts, the ratio between the powers of the said two resilient devices being such that the first mentioned one begins to act before the second mentioned one has reached its 55 resiliency limit so as to permit the effect of the two devices to be added together within certain limits.

2. A device as claimed in Claim 1, characterised by the fact that the respective 60 functions of the two resilient devices are inverted by making the one interposed between the single trailing axle and the chassis of such power that it will damp or absorb light jolts and by giving to the 65 other device interposed between the single trailing axle and the rollers the power required to damp or absorb heavy jolts and shocks.

3. The suspension device for endless 70 track vehicles substantially as described or substantially as illustrated in the accompanying drawings.

Dated this 5th day of August, 1925.

ADOLPHE KEGRESSE, 75  
Per Boulton, Wade & Tennant,  
111/112, Hatton Garden, London, E.C. 1,  
Chartered Patent Agents.