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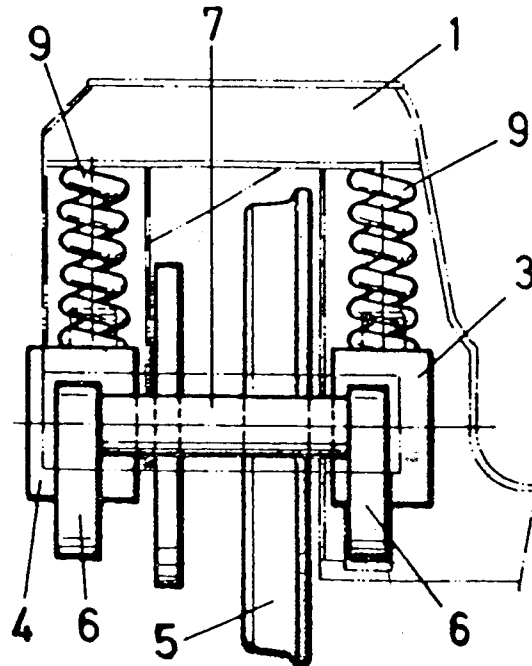
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**Primary suspension for railway vehicles.**

A primary suspension for railway vehicles consisting of providing a bearing box (3) with an arm (6) that, stiffly united to the arm (6) of the other bearing box (4) corresponding to the same wheel through an axle (2), oscillates inside a horizontal arm (8) belonging to the frame, and which is supported on flexible elements (9) intermediate between the bearing boxes (3,4) of said axle (2) and the frame, disposing of a stiff union between the bearing boxes (3,4) of each wheel by means of the axle (2) allowing the assembly to oscillate in relation to the bogie frame about a horizontal axle (7).



**FIG.-1**

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## BACKGROUND OF THE INVENTION

The present specification refers to a Patent of Invention - concerning a primary suspension for railway vehicles, the obvious purpose of which is to incorporate a primary suspension in an independent wheeled bogie in order to keep both a vertical position and a parallelism between them during the vertical oscillations caused as a result of the running.

## FIELD OF THE INVENTION

The application of this invention is envisaged to the railway industry.

## RELATED ART

The inventor is not aware of the present existence of a primary suspension for railway vehicles disposing of the particular features represented by this invention.

Obviously, he is aware of several suspensions used on railway vehicles, which are greatly different from the one covered by this invention.

## SUMMARY OF THE INVENTION

The primary suspension for railway vehicles covered by the invention constitutes, itself, an evident novelty in this field.

In a more definite way, the primary suspension for railway vehicles envisaged by this invention is shaped starting from a suspension incorporated to an independent wheeled bogie frame fixed in short axles, the bearing cases of which have, each of them, an arm stiffly united to that of its pair allowing the wheel assembly, short axle and bearing cases to oscillate in relation to the bogie frame, said arm being supported on flexible elements interposed between said bearing cases and the frame.

It is evident that the purpose of the present invention is to allow to incorporate a primary suspension in an independent wheeled bogie, in order to keep both the vertical position and a parallelism between the same wheels, during the vertical oscillations caused as a result of the running.

## BRIEF DESCRIPTION OF THE DRAWINGS

In order to supplement the present description and to help to a better understanding of the features of the invention, the appending drawings, which are a part of this specification, show in an illustrative but not limitative way, the following:

Figure 1 shows a front elevational view of the primary suspension for railway vehicles covered

by the invention.

Figure 2 is a side elevational view of the object shown in Fig. 1.

Figure 3 shows, lastly, a plan view of the object represented in the above figures.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

From these Figures, it can be clearly seen the primary suspension for railway vehicles, which is the object of the present invention, intended to be incorporated between an independent wheeled bogie frame 1 and a short axle 2, which is mounted between two bearing cases 3 and 4, per each wheel.

The primary suspension for railway vehicles has an own significance in that each bearing case 3 and 4, has an arm 6, stiffly united to the arm of the other case 4 or 3, corresponding to the same wheel 5, through an axle 7 oscillating inside a horizontal arm 8, belonging to said frame, and it is supported on flexible elements 9 located between the bearing cases 3 and 4 and said axle 2 and the frame.

In synthesis, it can be said that the purpose of the invention is to incorporate a primary suspension to an independent wheeled bogie, in order that these wheels keep both a vertical position and a parallelism between them during the vertical oscillations caused as a result of the running.

It is not considered necessary to extend more this description for an expert in the art to understand the scope of the invention and the advantages derived from it.

The materials, shape, size and arrangement of its components are open to variation, provided that it does not imply any alteration to the essence of the invention.

The terms under which this specification has been described should be taken in an ample and non limitative sense.

## **Claims**

1. A primary suspension for railway vehicles, of the type intended to be incorporated between an independent wheeled bogie frame (1) and a short axle (2), mounted between two bearing cases (3) and (4) per wheel (5), **characterized** in that each bearing case has an arm (6) that, stiffly united to the arm of the other case corresponding to a same wheel, through an axle (7), oscillated inside a horizontal arm (8), belonging to said frame and supported on flexible elements (9) intermediate between the bearing cases of said axle and the frame.

2. A primary suspension for railway vehicles, according to claim 1, **characterized** in that it has a rigid union between the bearing bases (3) and (4) of each wheel by means an axle (7) which allows the assembly to oscillate in relation to a bogie frame (8) according to a horizontal axle. 5
3. A primary suspension for railway vehicles, according to any of the preceding claims, **characterized** in that it has two bearing cases (3) and (4), which are leant on the bogie frame through flexible elements (9). 10

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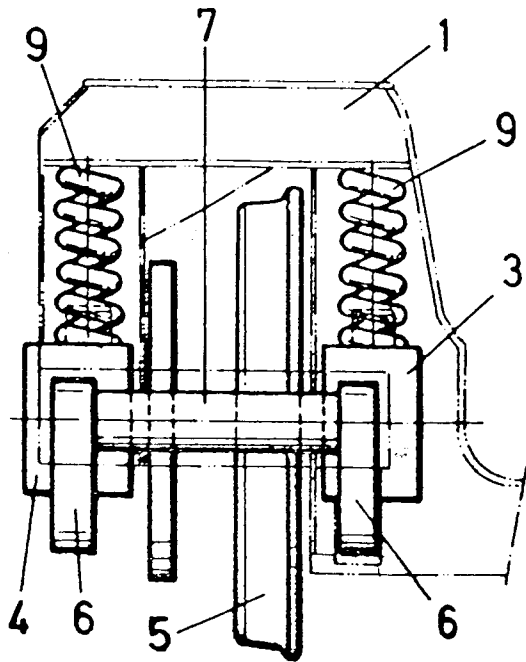


FIG.-1

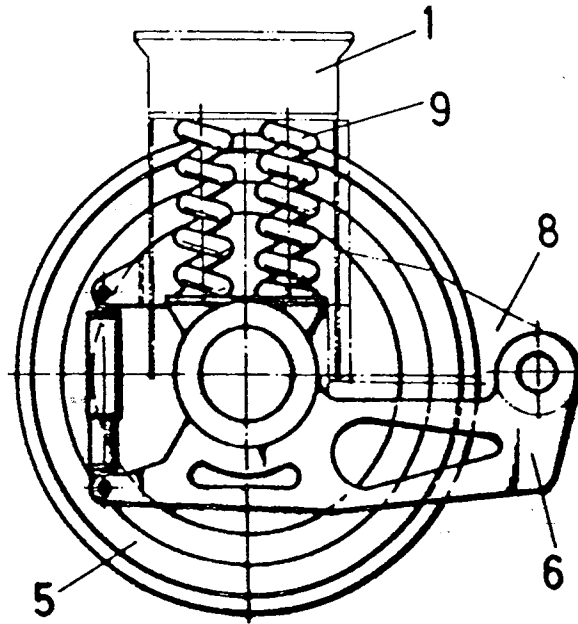


FIG.-2

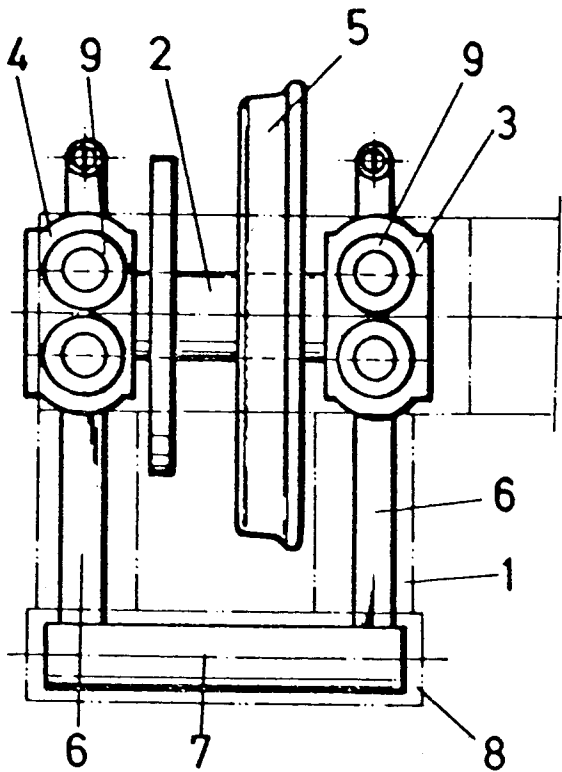


FIG.-3



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	GB-A-1 074 535 (MAN MOHAN SURI) * the whole document * ---	1-3	B61F5/32 B61F3/16
X	US-A-2 097 967 (G. E. EDMUNDS) * the whole document * ---	1-3	
X	GB-A-1 429 278 (J. B. MACKANESS) * page 1, line 72 - page 2, line 46; figures 1,3 * ---	1-3	
X	US-A-4 658 734 (J. MROZ) * column 2, line 47 - column 4, line 43 * * column 5, line 22 - line 37; figures 1-3,10 * -----	1-3	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B61F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 01 JUNE 1993	Examiner P. CHLOSTA
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