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(54) **BRAKE CARRIER FOR THE BOGIES OF RAIL VEHICLES**

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(57) **ABSTRACT**

A brake carrier for bogies of rail vehicles has an open cross-section with flexible torsion. A connection to two longitudinal members of the bogie is designed as a rigid non-articulated connection and a braking device is fixed to the brake carrier in such a way that a line of action of braking forces runs through the shear centre that lies outside the cross-section of the brake carrier.

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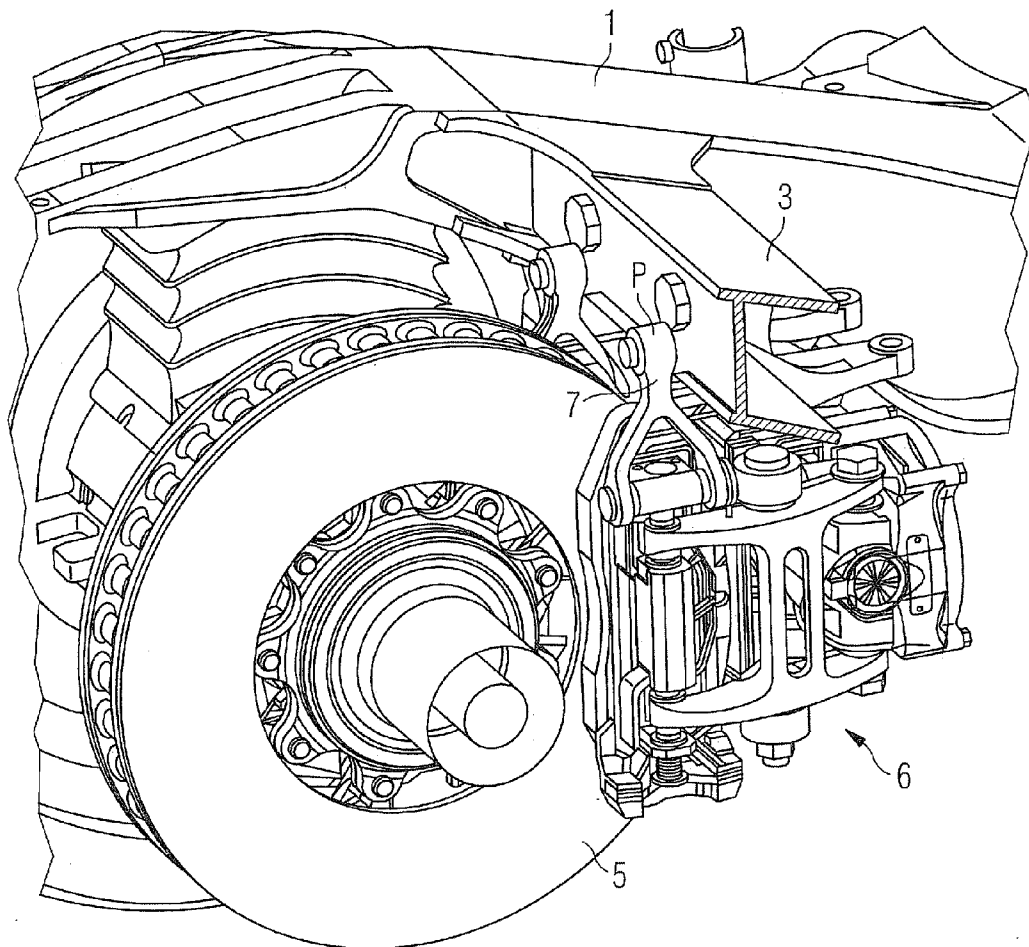


FIG 1

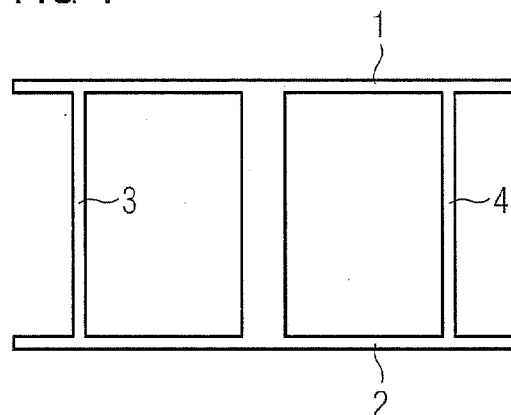


FIG 2

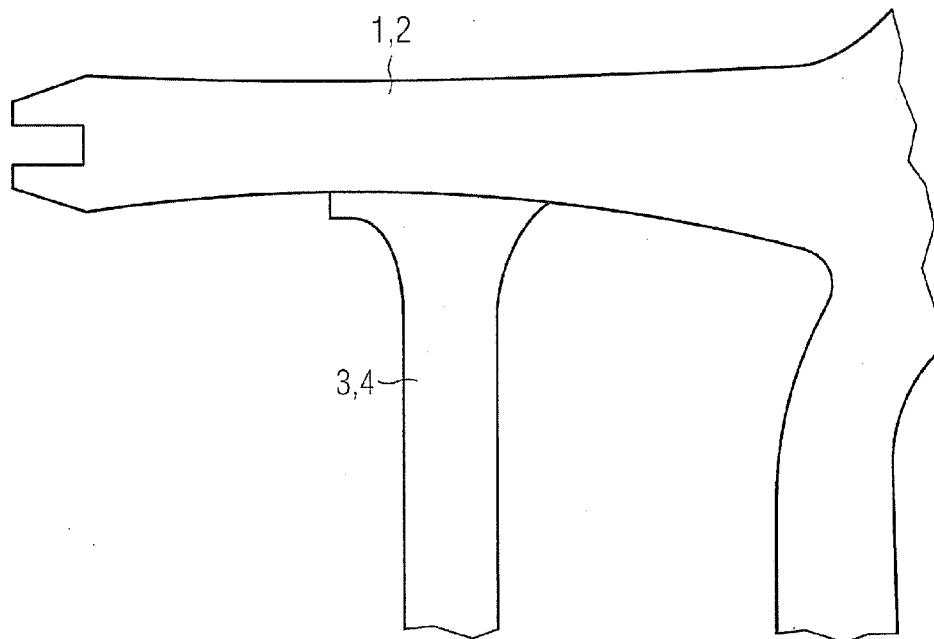
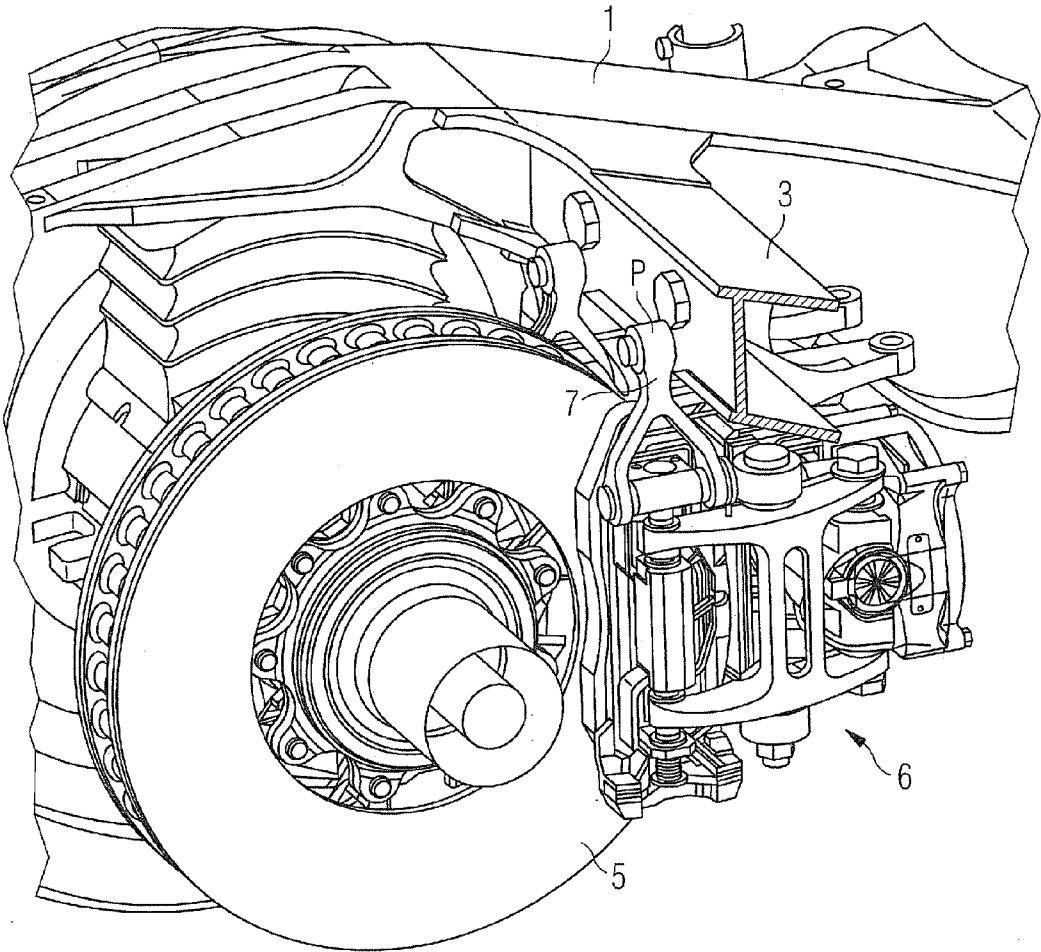


FIG 3



BRAKE CARRIER FOR THE BOGIES OF RAIL VEHICLES

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is the US National Stage of International Application No. PCT/EP2010/059620 filed Jul. 06, 2010, and claims the benefit thereof. The International Application claims the benefits of Austrian Patent Application No. A 1122/2009 AT filed Jul. 16, 2009. All of the applications are incorporated by reference herein in their entirety.

FIELD OF INVENTION

[0002] The invention relates to a brake carrier for undercarriage frames of rail vehicles, wherein the brake carrier has a torsionally soft, open cross-section and wherein the attachment to the two longitudinal members of the undercarriage frame is implemented as a rigid, non-articulated connection.

BACKGROUND OF INVENTION

[0003] Brake carriers are often inserted into the undercarriage frame as transverse members in order to secure the braking mechanisms in undercarriage frames for rail vehicles.

[0004] This causes the resulting braking torque to be transmitted onto the undercarriage frame.

[0005] DE 14 55 189 A1 discloses a rigid railroad vehicle bogie which comprises C-shaped transverse members that consequently have a torsionally soft and open cross-section.

[0006] DE 25 43 558 A1 also discloses torsionally soft transverse members having an open cross-section.

[0007] The weight of the undercarriage is increased due to the brake carrier; furthermore, the introduction of the braking torque leads to the undercarriage frame being subjected to undesirable stresses.

SUMMARY OF INVENTION

[0008] An object of the claimed invention is to disclose an improved solution for the brake carrier.

[0009] This object is achieved by a brake carrier for undercarriage frames of rail vehicles, wherein the brake carrier has a torsionally soft, open cross-section and wherein the attachment to the two longitudinal members of the undercarriage frame is implemented as a rigid, non-articulated connection, with the braking mechanism being secured to the brake carrier in such a way that the line of action of the braking forces runs through the shear center which is located outside the cross-section of the brake carrier.

[0010] A twist-free shear force flexure of the carrier is achieved by means of the inventive constructional measure.

[0011] As a result the carrier can be constructed so as to be lighter in weight. Furthermore, the undesirable stresses on the undercarriage frame occurring due to the braking torque being introduced into the undercarriage frame are reduced.

[0012] Advantageously, the brake carrier can have an approximately C-, U-, T- or I-shaped cross-section.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The invention is explained in more detail with reference to exemplary embodiments shown in the figures, in which by way of example:

[0014] FIG. 1 shows the arrangement of the brake carriers in an undercarriage frame,

[0015] FIG. 2 shows the attachment of a brake carrier to a longitudinal member of the undercarriage frame, and

[0016] FIG. 3 shows the arrangement of braking mechanism and brake carrier in an undercarriage frame.

DETAILED DESCRIPTION OF INVENTION

[0017] The schematic representation according to FIG. 1 shows an undercarriage frame having two longitudinal members 1, 2, two brake carriers 3, 4 and a cross member.

[0018] As shown in FIG. 2, the brake carriers 3, 4 are connected to the longitudinal members 1, 2 in a rigid and non-articulated manner. This can be accomplished for example by means of a welded joint.

[0019] The representation according to FIG. 3 shows a braking mechanism 6 with brake disk 5 which is connected by way of a suspension link 7 to the brake carrier 3 having an approximately C-shaped cross-section.

[0020] By means of the suspension link 7 secured to the back of the C-shaped cross-section on the brake carrier 3 by way of an articulated joint and a bolted fastening, the line of action of the braking forces runs through the brake carrier's shear center which is located in this position.

[0021] Owing to the open cross-section the brake carrier 3 is torsionally soft, which means that it does not significantly affect the suppleness of the undercarriage frame. As a result the structural requirements in respect of the primary spring stage of the undercarriage are accordingly also less stringent.

[0022] Components under torsional stress having an open cross-section such as having a C, U, T or I shape, for example, are torsionally softer than components having a closed cross-section such as tubes or components having a rectangular cross-section and being substantially stiffer.

[0023] By virtue of undercarriage frame and brake carrier being structurally designed in such a way that the line of action of the braking forces runs through the shear center which is located outside the cross-section of the brake carrier, torsion-free loading, i.e. a twist-free shear force flexure, is achieved.

[0024] As a result the brake carrier according to the invention can not only be built lighter in weight, but thanks to the spatial separation of shear center and physical carrier also provides advantages in relation to the structural design possibilities of the undercarriage frame.

1.-5. (canceled)

- 6. A brake carrier for undercarriage frames of rail vehicles, wherein the brake carrier has a torsionally soft, open cross-section, wherein an attachment to two longitudinal members of an undercarriage frame is a rigid, non-articulated connection, and wherein a braking mechanism is secured to the brake carrier such that a line of action of braking forces runs

through a shear center which is located outside the cross-section of the brake carrier.

7. The brake carrier as claimed in claim 6, wherein the brake carrier comprises an approximately C-shaped cross-section.

8. The brake carrier as claimed in claim 6, wherein the brake carrier comprises an approximately U-shaped cross-section.

9. The brake carrier as claimed in claim 6, wherein the brake carrier comprises an approximately T-shaped cross-section.

10. The brake carrier as claimed in claim 6, wherein the brake carrier comprises an approximately I-shaped cross-section.

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