

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference see form PCT/ISA/220		FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/EP2018/075787	International filing date (day/month/year) 24.09.2018	Priority date (day/month/year) 25.09.2017
International Patent Classification (IPC) or both national classification and IPC INV. B61C15/04 B61F1/06 ADD. B61F3/04 B61C15/06		
Applicant STADLER RAIL VALENCIA S.A.U.		

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Fax: +49 89 2399 - 4465	Date of completion of this opinion see form PCT/ISA/210	Authorized Officer Fernandez, Eva Telephone No. +49 89 2399-0
--	--	---



Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed.
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
 - a. ☐ forming part of the international application as filed:
 - ☐ in the form of an Annex C/ST.25 text file.
 - ☐ on paper or in the form of an image file.
 - b. ☐ furnished together with the international application under PCT Rule 13ter.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
 - c. ☐ furnished subsequent to the international filing date for the purposes of international search only:
 - ☐ in the form of an Annex C/ST.25 text file (Rule 13ter.1(a)).
 - ☐ on paper or in the form of an image file (Rule 13ter.1(b) and Administrative Instructions, Section 713).
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

see separate sheet

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	<u>1-13</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	<u>1-13</u>
	No: Claims	
Industrial applicability (IA)	Yes: Claims	<u>1-13</u>
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item I

Basis of the report

The applicant has requested to have the present application processed under PCT Direct (PCT Guidelines B-IV, 1.2.1). This application claims priority from an earlier European application filed with number 17 382 637.1 on 25 September 2017.

Amendments to claim 1 have been filed with the PCT letter dated 24 September 2018, as follows:

"A ballast system (5) adapted to modify the mass of a railway vehicle (10), comprising at least one ballast element (4), and at least one ballast receptacle (1), being part of the structure of the railway vehicle (10) and adapted to house each at least one ballast element (4),

~~characterized in that wherein~~

each at least one ballast element (4) is removable, and in that the ballast system (45) further comprises at least a guide means (2) adapted to allow introducing each at least one ballast element (4) in or removing it from the ballast receptacle (1).

characterized in that at least a guide means (2) are one or more guide rails."

Basis for these amendments can be found both in the set of claims and in the text of the description as originally filed with the earlier European application (see in particular claims 1 and 2; see page 7, lines 21-34 and page 8, lines 25-30).

The amendments do not introduce subject-matter which extends beyond the content of the application as filed.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 Reference is made to the following documents:

D1 : JP 2006 137238 A (NIPPON SHARYO SEIZO KK) 1 June 2006

D2 : US 2 409 730 A (BLOMBERG MARTIN P ET AL) 22 October 1946

- 2 Account taken of the applicant's comments submitted with the PCT Direct letter of 24 September 2018, this Authority considers that the claims 1-13 meet the criteria of Article 33(1) PCT.
- 2.1 Document D1 is regarded as being the prior art closest to the subject-matter of claim 1, since it discloses a ballast system (see Abstract; Figures 1-4) adapted to modify the mass of a railway vehicle 1, comprising, *according to the preamble of independent claim 1*, the following features:
- at least one ballast element (i.e. "*weight*") 42, and
 - at least one ballast receptacle (i.e. "*storing portions*") 43 adapted to house each at least one ballast element 42 (see in particular Figure 2),
 - the ballast receptacle 43 being part of the structure of the railway vehicle 1 and adapted to house at least one ballast element 42 (see Figure 2),
 - wherein each at least one ballast element 42 is removable, and the ballast system further comprises at least a guide means 25, 44, 45, 46 (cf. page 4, paragraphs [0011]-[0012]; see also Figure 2) adapted to allow introducing each at least one ballast element 42 in or removing it from the ballast receptacle.
- 2.2 The subject-matter of claim 1 differs from this known device in that
- at least a guide means (2) are one or more guide rails.
- Hence, the subject-matter of claim 1 is new in the sense of Article 33(2) PCT.
- 2.3 The claimed invention proposes a system for quickly and easily modifying the weight of a railway vehicle, such that the tractive load available in the railway vehicle can be increased to its maximum, without losing usable volume in the vehicle.
- 2.4 This is achieved by a system comprising the features of claim 1. In particular, the provision of guide means in the form of rails enables an assembly of the ballast elements in the corresponding ballast receptacles in a simple manner and without complex and expensive constructive elements. In addition, the rails themselves support the weight of the ballast elements and transmit it to the railway vehicle.
- 2.4.1 This solution is not rendered obvious by the prior art available. For instance, D2 discloses a ballast system adapted to modify the mass of a railway vehicle (see Figures 1-2), comprising at least one ballast element 60, 61, 62, 63, and

at least one ballast receptacle adapted to house each at least one ballast element 60, 61, 62, 63, *according to the preamble of independent claim 1*. According to D2, at least one ballast element 60, 61, 62, 63 is removable, and the ballast system further comprises means 2, 44 adapted to allow introducing each at least one ballast element 60, 61, 62, 63 in or removing it from the ballast receptacle (see Figure 6).

- 2.4.2 In the light of D2, however, the provision of guide means in the form of rails in the ballast receptacle would not be regarded as an obvious measure for the person skilled in the art of railway vehicles, since the ballast elements according to this prior art are defined as "ballast bars" or "billets" made smaller than the spaces they are intended to fit into, being merely rough pieces which do not have finished surfaces and consequently may vary considerably in size and shape (cf. column 6, lines 28-38).

The subject-matter of claim 1 is therefore considered inventive in the sense of Article 33(3) PCT

- 2.5 Claims 2-11 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.
- 3 A vehicle comprising a ballast system according to claim 1, as defined in claim 12, also meets the requirements of the PCT with respect to novelty and inventive step.
- 4 A method of modifying the mass of a railway vehicle by means of a ballast element and comprising the steps defined in claim 13, by providing a vehicle as defined in claim 12, is also novel over D1 or D2 and cannot be rendered obvious by this prior art available or any other document cited in the search report. Hence, claim 13 also meets the criteria of Article Article 33(2) PCT and Article 33(3) PCT.

Re Item VII

Certain defects in the international application

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in D1 is not mentioned in the description, nor is this or any other document identified therein.

Re Item VIII

Certain observations on the international application

The application does not meet the requirements of Article 6 PCT.

For the person skilled in the art of modifying the mass of railway vehicles, the receptacle for housing a ballast or weight is part of the actual structure of the locomotive, in particular the underframe of the vehicle. This feature has been added to the preamble of claim 1.

"(the receptacle) being part of the structure of the railway vehicle ..."

However, the intended limitations are therefore not clear from this added wording, since it defines the receptacle as a feature of another entity, in particular, a railway vehicle which is not a structural part of the claimed subject-matter (as it is, for instance, clearly specified in claim 12 of the present application). Hence, it is unclear whether the vehicle is a technical feature of the claimed apparatus or merely constitutes a functional reference.