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(54) **Rail grinding apparatus and method**

(57) A rail grinding apparatus has a first power driven grinding section (20) and a second section (22) which rolls along the rail. Rotation of the wheel(s) of the second section (22) is caused by driving the apparatus along

the rail, and the energy from this rotation at least partially drives the first section (20). The second section can also carry out a non-powered grinding operation as well as providing power for the first section.

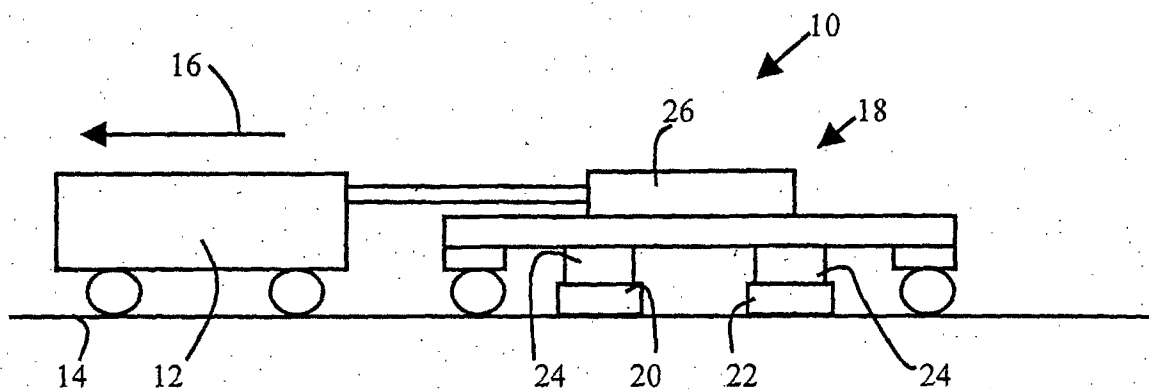


FIG. 1



European Patent
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EUROPEAN SEARCH REPORT

Application Number
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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.7)
X	US 5 580 299 A (POMIKACSEK JOSEF) 3 December 1996 (1996-12-03) * column 3, line 42 - column 4, line 67; claim 4; figures 1,2,5 *	1,7, 13-16	E01B31/17
A	US 2002/049032 A1 (HEMPEL CHAD C) 25 April 2002 (2002-04-25) * abstract; figures 1-4 *	1,7	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			E01B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 25 June 2004	Examiner Fernandez, E
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03/82 (P04C01)



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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-17



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LACK OF UNITY OF INVENTION
SHEET B

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-17

Claim 1 relates to a rail grinding apparatus comprising
a) a first section having at least one first grinding wheel which can be driven to maintain a linear surface velocity relative to the rail, and
b) a second section having at least one second wheel, wherein
c) rotation of the second wheel is entrained by movement of the apparatus along the rail, and
d) the energy from which rotation at least partially drives the first section.

Claims 2-17 are dependent claims referred back to claim 1.

2. claim: 18

Claim 18 relates to a rail grinding apparatus comprising
a) at least one first grinding wheel, and
b) at least one second grinding wheel, wherein
c) the first and the second wheels are coupled together such that there is a fixed relation between the rotational speeds of the first and second wheels, such as to provide different linear velocities of the surfaces of the wheels in contact with the rail.

3. claim: 19

Claim 19 relates to a rail grinding apparatus comprising
a) at least one grinding wheel, and
b) an electromagnetic arrangement for location in the vicinity of the rail to provide a variable downward force on the grinding wheel.

4. claims: Claims 20-22

Claim 20 relates to a method of machining the top surface of a rail, comprising
a) moving a rail grinding apparatus along the rail, during which
b) a first driven section provides first controllable grinding, and
c) a second, non-driven, section provides second grinding,
d) wherein the second non-driven section is also used at least partially to drive the first section.

Claims 21 and 22 are referred back to claim 20.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 25 3300

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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25-06-2004

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		AT 165883 T	15-05-1998
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