

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
16 September 2004 (16.09.2004)

PCT

(10) International Publication Number
WO 2004/079096 A3

(51) International Patent Classification⁷: **E01B 19/00**

(74) Agents: **DOWNING, Michael, Philip** et al.; Fry Heath & Spence LLP, The Gables, Massetts Road, Horley, Surrey RH6 7DQ (GB).

(21) International Application Number:
PCT/GB2004/000822

(22) International Filing Date: 27 February 2004 (27.02.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0304997.0 5 March 2003 (05.03.2003) GB

(71) Applicant (for all designated States except US): **CORUS UK LIMITED** [GB/GB]; 30 Millbank, London SW1P 4WY (GB).

(72) Inventors; and

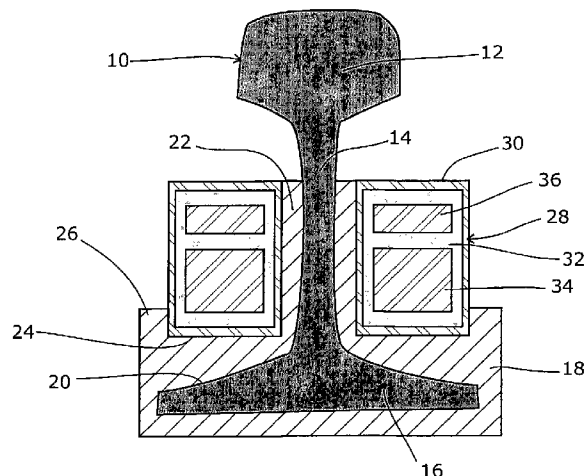
(75) Inventors/Applicants (for US only): **FARRINGTON, David** [GB/GB]; Blossom Hill Cottage, Morland, Penrith CA10 3AS (GB). **JONES, Christopher, John, Cedric** [GB/GB]; 1 Eldridge Gardens, Romsey, Hants SO51 7RT (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: RAIL DAMPER



(57) Abstract: A rail damper comprises an elongate damping means (28, 58) and a clip (18, 50) for supporting the damping means (28, 58), the clip (18) having a retention aperture (20, 52) for receiving part of the rail (10) and, further, a recess (24) adapted to receive the damper. This is particularly (although not exclusively) suited to dampers in which an elongate hollow rigid section (30) encloses a deformable material (32) in which is suspended one or more resonant members (34, 36). The clip (18) can be adapted to fit around the foot (16) of the rail (10). It can include one or more tongues (22, 54) extending alongside the web (14) of the rail (10). This will assist in separating the damper (28, 58) from the web (14) while still allowing vibrations to be conducted from one to the other. The tongues (22, 54) can be any suitable height, for example the full height of the web (14), or the full height of the dampers (28, 58), or less than one or other such heights. Additionally, a damper (28, 58) for a rail (10) is disclosed which comprises an elongate hollow rigid section (10) enclosing a deformable material in which is suspended at least two resonant members, the resonant members being sized to exhibit a resonant frequency in the range of vibration frequencies of the rail. It is preferred that the deformable material fills the space within that rigid hollow section.

WO 2004/079096 A3

**Declarations under Rule 4.17:**

- *as to the identity of the inventor (Rule 4.17(i)) for the following designations* AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, *ARIPO patent* (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), *Eurasian patent* (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), *European patent* (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), *OAPI patent* (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations* AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM,

PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, *ARIPO patent* (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), *Eurasian patent* (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), *European patent* (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), *OAPI patent* (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:

18 November 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.