



(51) International Patent Classification:

F16L 53/00 (2006.01) *F16L 58/10* (2006.01)
F16L 1/06 (2006.01) *H05B 1/02* (2006.01)
F16L 47/22 (2006.01) *H05B 3/12* (2006.01)
F16L 55/00 (2006.01) *H05B 3/36* (2006.01)

(21) International Application Number:

PCT/CA2012/050511

(22) International Filing Date:

27 July 2012 (27.07.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/558,037 10 November 2011 (10.11.2011) US

(71) Applicant (for all designated States except US): **SHAW-COR LTD.** [CA/CA]; 25 Bethridge Road, Toronto, Ontario M9W 1M7 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **TAILOR, Dilip, Kumar** [CA/CA]; 25 Kingsbridge Garden Circle, Unit 525, Mississauga, Ontario L5R 4B1 (CA). **BRANDON, Mark, Phillip** [CA/CA]; 151 Winter Gardens Trail, Toronto, Ontario M1C 3M9 (CA). **TACOMA, Emerson, John** [CA/CA]; 59 Grist Mill Drive, Georgetown, Ontario L7G 6C1 (CA). **DOYLE, Shawn** [CA/CA]; 24 Killaloe Crescent, Georgetown, Ontario L7G 5N1 (CA). **SEEPER-SAUD, David** [CA/CA]; 153 Upper Humber Drive, Etobicoke, Ontario M9W 7B7 (CA).

(74) Agent: **RIDOUT AND MAYBEE LLP**; 225 King Street West, 10th Floor, Toronto, Ontario M5V 3M2 (CA).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,

[Continued on next page]

(54) Title: APPARATUS CONTAINING MULTIPLE SEQUENTIALLY USED INFRARED HEATING ZONES FOR TUBULAR ARTICLES

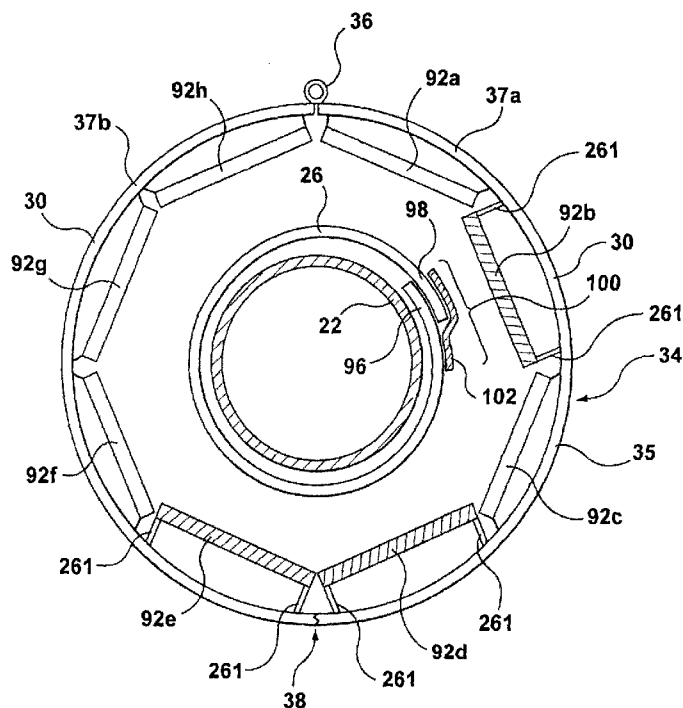


FIG. 21

(57) Abstract: An apparatus for heating an elongate tubular article, such as a heat shrinkable sleeve applied around a welded pipe joint during pipeline construction. The apparatus is in the form of a frame which can be disposed around the article, the frame having a heater device having both longitudinally disposed heating zones and radially disposed heating sectors, each of which can be independently controlled. Alternatively, or in combination, the apparatus can have an air circulation system. Also, a method for shrinking a heat shrinkable sleeve comprising use of said apparatus.



ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,

Published:

— *with international search report (Art. 21(3))*