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(21) International Application Number: PCT/US98/23805 (22) International Filing Date: 10 November 1998 (10.11.98) (30) Priority Data: 08/978,334 25 November 1997 (25.11.97) US (71) Applicant: MEMC ELECTRONIC MATERIALS, INC. [US/US]; 501 Pearl Drive, P.O. Box 8, St. Peters, MO 63376 (US). (72) Inventors: CHERKO, Carl, F.; 2085 Willow Trail Court, St. Charles, MO 63303 (US). KORB, Harold; 13717 Benwirth Court, Town & Country, MO 63017 (US). SCHRENKER, Richard, G.; 15566 Rose Gate Lane, Chesterfield, MO 63017 (US). WILLIAMS, Dick, S.; 4514 Prince Pine Trail, Houston, TX 77059 (US). (74) Agents: HEJLEK, Edward, J. et al.; Senniger, Powers, Leavitt & Roedel, 16th floor, One Metropolitan Square, St. Louis, MO 63102 (US).		(81) Designated States: CN, JP, KR, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i>
(54) Title: APPARATUS FOR USE IN CRYSTAL PULLING (57) Abstract The apparatus comprises a drum, a chuck constructed for holding the seed crystal and the ingot, and a cable having a first end connected to the drum, a second end connected to the chuck and a portion wound around the drum. The portion of the cable wound around the drum exerts a normal force on a circumferential surface of the drum corresponding to the tension in the cable. The drum and cable interact to produce a friction force resisting sliding movement of the cable relative to the drum in a direction lengthwise of the cable. The chuck has a mass selected to exert a pre-tension on the cable prior to growing the ingot such that the increase in the friction on the portion of the cable wound around the drum as the cable is reeled in to pull the ingot from the source material is at least equal to the increase of the weight of the ingot as it grows on the seed crystal from the molten source material.		