

(19) World Intellectual Property
Organization
International Bureau



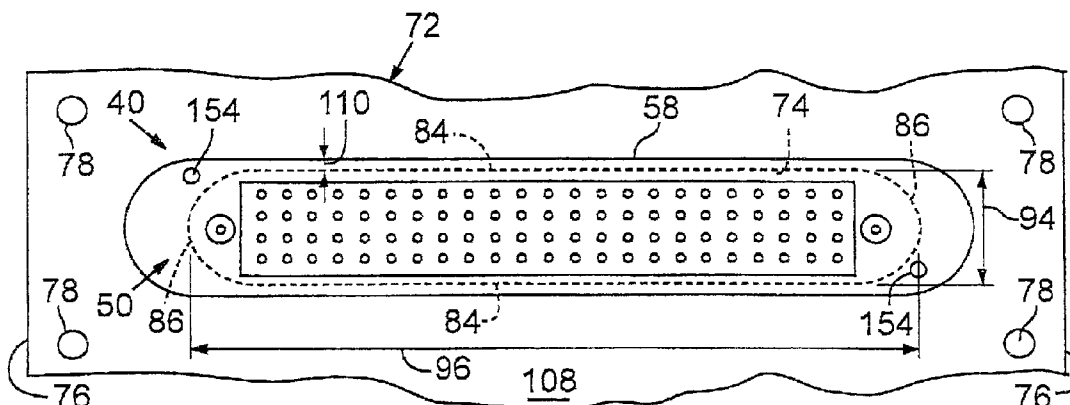
(43) International Publication Date
26 February 2004 (26.02.2004)

PCT

(10) International Publication Number
WO 2004/016532 A2

- (51) International Patent Classification⁷: **B65G 47/84**
- (21) International Application Number:
PCT/US2003/025767
- (22) International Filing Date: 15 August 2003 (15.08.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/404,192 16 August 2002 (16.08.2002) US
- (71) Applicant (for all designated States except US): **ELECTRO SCIENTIFIC INDUSTRIES, INC.** [US/US]; 13900 NW Science Park Drive, Portland, OR 97229-5497 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **WHITEMAN, Kenneth, S.** [US/US]; 2537 NW Mill Pond Road, Portland, OR 97229 (US). **STACKPOLE, John, D.** [US/US]; 1040 Harbor Isle Blvd., Klamath Falls, OR 97601 (US).
- (74) Agent: **LEVINE, Michael, L.**; Stoel Rives LLP, 900 SW Fifth Avenue, Suite 2600, Portland, OR 97204-1268 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, 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, 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 (*regional*): ARIPO patent (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:**
— without international search report and to be republished upon receipt of that report
- 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.

(54) Title: MODULAR BELT CARRIER FOR ELECTRONIC COMPONENTS



(57) **Abstract:** Replaceable component carriers (40) are adapted to be freely floating in belt apertures (74) and have alignment features (160), such as conical holes (170), mated to features (162), such as tapered pins (184), in processing stations to temporarily hold a carrier (40) and its components (10), such as resistors, in a fixed position during various processes, such as termination. The carriers (40) include a rigid substructure (50) and a more elastic coating (60) to provide receiving holes (46) that can be adapted to hold particular components (10). The carriers (40) can be replaced without removing the belt (72), whenever differently shaped holes (46) are desired or become too worn to reliably handle components (10), thereby reducing damage risk, replacement cost, and operational down time of the belt (72).