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(21) International Application Number: PCT/US99/24683 (22) International Filing Date: 20 October 1999 (20.10.99) (30) Priority Data: 09/176,013 20 October 1998 (20.10.98) US (71) Applicant: ECRIX CORPORATION [US/US]; Craig Lamborn, 5525 Central Avenue, Boulder, CO 80301 (US). (72) Inventors: BEAVERS, Kelly, J.; 450 College Avenue, Boulder, CO 80302 (US). BLATCHLEY, Michael, A.; 2839 Shoal Circle, Longmont, CO 80503 (US). DETRO, David, L.; 13676 Vermillion Trail, Longmont, CO 80501 (US). DUNN, Paul; 2150 Cypress Court, Longmont, CO 80503 (US). (74) Agents: FISHMAN, Daniel, N. et al.; Lee & Fishman, LLP, Suite A, 1900 15th Street, Boulder, CO 80302 (US).			(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>Without international search report and to be republished upon receipt of that report.</i>

(54) Title: **OVERSCAN HELICAL SCAN HEAD FOR NON-TRACKING TAPE SUBSYSTEMS READING AT UP TO 1X SPEED AND METHODS FOR SIMULATION OF SAME**

(57) Abstract

A helical scan drum design for use in non-tracking tape devices which assures 70% coverage of a track to be read by overscanning with at least two read heads at approximate 1X speed. The present invention further provides a simulation method for evaluating potential drum designs for such overscan applications. The preferred drum design uses pairs of like-azimuth read heads positioned on the rotating drum such that in combination they overlap the scan of a track by 130% the track width. These dimensions assure at least 70% coverage of each track by at least one of the pair of heads at up to 1X speed while assuring no overlap with another like-azimuth recorded track. The simulation method allows for evaluation of potential drum designs by accepting parameters describing the intended drum application and then simulating track read operations over a plurality of simulated tracks to determine the efficacy of the design over a range of tape speeds and gap widths. Designs that simulate successful reading of a sufficient threshold number of tracks over a sufficiently broad range of tape speeds may then be selected for further test and evaluation.

