PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : G11B 5/596 — A1

(11) International Publication Number: WO 99/08267

(43) International Publication Date: 18 February 1999 (18.02.99)

(21) International Application Number: PCT/US98/09965

(22) International Filing Date: 15 May 1998 (15.05.98)

(30) Priority Data:
60/055,126 7 August 1997 (07.08.97) US
09/026,455 19 February 1998 (19.02.98) US

(71) Applicant: SEAGATE TECHNOLOGY, INC. [US/US]; 920 Disc Drive, Scotts Valley, CA 95066 (US).

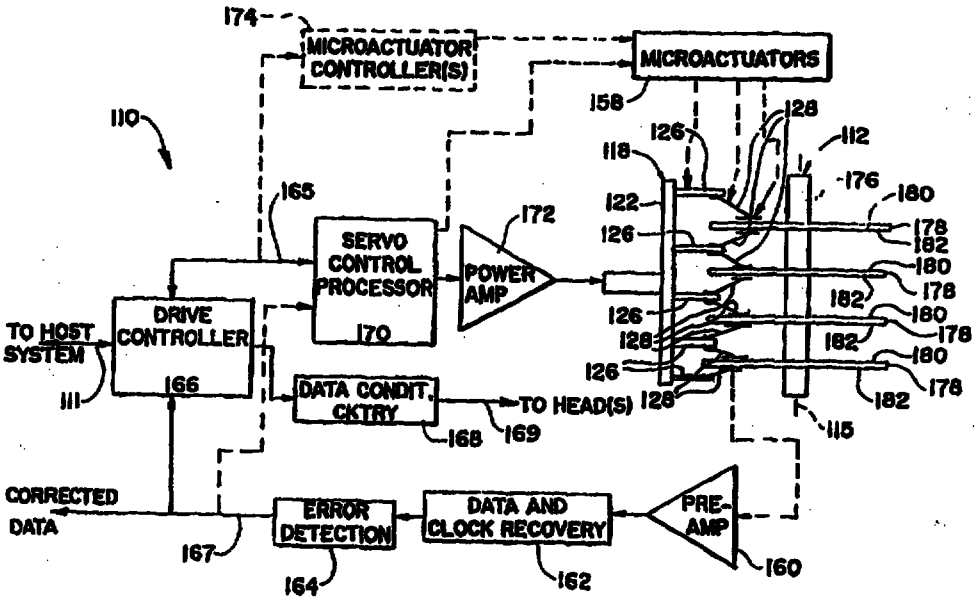
(72) Inventor: MORRIS, John, C.; 5045 Oliver Avenue South, Minneapolis, MN 55419 (US).

(74) Agents: KELLY, Joseph, R.; Westman, Champlin & Kelly, P.A., Suite 1600 – International Centre, 900 Second Avenue South, Minneapolis, MN 55402–3319 (US) et al.

(81) Designated States: CN, DE, GB, JP, KR, SG.

Published
With international search report.

(54) Title: DISC DRIVE WITH ROBUST TRACK FOLLOWING SERVO CONTROLLER



(57) Abstract

A servo system in a disc drive (110) provides robust servo control during track following operations. The disc drive (110) includes a rotatable disc (112) having a disc surface (180, 182) with information arranged in tracks on the disc surface (180, 182). The disc drive (110) also includes a transducer (144) for accessing the information on the disc surface (180, 182). An actuator arm (126) is operably coupled to the transducer (144). An actuator (173) is operably coupled to the actuator arm (126) to move the transducer (144) relative to the disc surface (180, 182) to follow one of the tracks during track following. A model–based servo controller (190) is operably coupled to the actuator (173) to control movement of the actuator (173). The model–based servo controller (190) provides robust track following control over a desired frequency range.