

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DANIEL E. HOBSON
and
PHILIP R. WOODS

Appeal No. 2000-1252
Application No. 08/522,839

HEARD: MARCH 7, 2002

Before HAIRSTON, KRASS, and BARRY, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 8 and 11 through 13. In an Amendment After Final (paper number 11), claims 1, 5 and 11 were amended.

The disclosed invention relates to a method and apparatus for eliminating the effects of repeatable runout (RRO) signals in a servo position error (SPE) signal in a disk drive. During the period of a mechanical revolution of the disk

drive, a measurement estimate of the RRO is obtained via sampling and accumulating of data from the SPE signal. The measurement estimate provides a characterization of the RRO in the SPE signal. A correction estimate for the SPE signal is updated by the measurement estimate, and the correction estimate is added to the SPE signal to produce an adjusted SPE signal. The disk drive uses the adjusted SPE signal to generate a correction signal that is used to adjust the position of an actuator in the disk drive.

Claim 5 is illustrative of the claimed invention, and it reads as follows:

5. In a disc drive having a disc and an actuator adjacent the disc, the disc having a plurality of nominally concentric tracks, the disc drive providing a servo position error signal indicative of the position of the actuator relative to a selected track, the disc drive further providing a correction signal to adjust the relative position of the actuator with respect to the selected track, a method for reducing repeatable runout signals in the servo position error signal comprising the steps of:

sampling and accumulating data from the servo position error signal over a first complete disc revolution to provide a measurement estimate, the measurement estimate characterizing a repeatable runout signal in the servo position error signal;

providing a correction estimate;

Appeal No. 2000-1252
Application No. 08/522,839

updating the correction estimate with the
measurement estimate at the end of the first
complete disc revolution;

Appeal No. 2000-1252
Application No. 08/522,839

Turning first to the broadest claim on appeal (i.e., claim 5), we find that Andrews discloses a disk drive having a disk 301 and an actuator adjacent the disk (Figure 3). The disk has a plurality of nominally concentric tracks, and the disk drive provides a SPE signal 399 to microcontroller 310 that is indicative of the position of the actuator relative to a selected track (Figure 4). The disk drive further provides a correction signal 421 to adjust the relative position of the actuator with respect to a selected track to thereby reduce the RRO signals in the SPE signal. In the secondary servo compensator 400 (Figures 4 and 5), a measurement estimate is provided by sampling data from the SPE signal 399 with runout analyzer 510 and runout compensation generator 520, and accumulating data from the SPE signal in memory 450 over a first complete disk revolution. The measurement estimate characterizes RRO signals in the SPE. The correction estimate from gain adjustment 530 is a correction estimate for the RRO signals in the SPE signal. Andrews continuously updates the correction estimate with a measurement estimate to produce the correction estimate "sector by sector" on each track (column

Appeal No. 2000-1252
Application No. 08/522,839

4, lines 21 through 32; column 7, lines 4 through 24), as opposed to "at the end of the first complete disc revolution" (claim 5). In view of this update correction difference, each and every limitation of claim 5 is not disclosed in Andrews. In keeping with Glaxo Inc. v. Novopharm Ltd.,

52 F.3d 1043, 1047, 34 USPQ2d 1565, 1567 (Fed. Cir.), cert. denied, 516 U.S. 3378 (1995), the 35 U.S.C. § 102(e) rejection of claim 5 and the claims that depend therefrom is reversed.

The 35 U.S.C. § 102(e) rejection of claims 1 through 4 and 11 through 13 is likewise reversed because the same limitation is found in each of these claims.

Appeal No. 2000-1252
Application No. 08/522,839

DECISION

The decision of the examiner rejecting claims 1 through 8 and 11 through 13 under 35 U.S.C. § 102(e) is reversed.

REVERSED

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
ERROL A. KRASS)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
)	
)	
LANCE LEONARD BARRY)	
Administrative Patent Judge)	

KWH:hh

Appeal No. 2000-1252
Application No. 08/522,839

CROWE & DUNLEVY
1800 MID-AMERICA TOWER
20 N. BROADWAY
OKLAHOMA CITY, OK 73102-8273