Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HO-YUL BANG

Appeal No. 2001-1847
Application No. 08/861,157

HEARD: November 7, 2002

Before BARRETT, RUGGIERO, and GROSS, Administrative Patent Judges.
GROSS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 through 26, which are all of the claims pending in this application.

Appellant's invention relates to a recording medium having a data recording disk with plural concentric tracks, each track having servo sectors in which servo information for use in positioning a transducer head is written, each servo sector having a first subpart for all of the synchronization information for reading data recorded on the data sector, an identification region, and a second subpart including a data address mark

region, a data field, and an error correction code region. Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. A method for forming a data sector of a recording medium in a disk drive, the data sector including an identification region for containing identification information for the data sector and including a data region for containing data transferred from an external communication device, comprising the steps of:

recording a first subpart of the data region at a first position on the disk drive;

recording a second subpart of the data region at a separately located second position on the disk drive, said second subpart of the data region containing the data transferred from the external communication device; and

recording the identification region at a third position on the disk drive interposed between the first and second subparts of the data region, the first subpart of the data region containing all of first synchronization information for reading the identification information contained in the identification region, and containing all of second synchronization information for reading data contained in the data region.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Greenberg et al. (Greenberg)	4,656,532	Apr. 07, 1987
Gold	5,475,540	Dec. 12, 1995
Prins et al. (Prins)	5,627,695	May 06, 1997 (filed Jan. 12, 1995)
Park	5,631,783	May 20, 1997 (filed May 31, 1995)

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Greenberg.

Claims 2, 3, and 17 through 26 stand rejected under 35 U.S.C. § 103 as being unpatentable over Greenberg in view of Gold.

Claim 25 stands rejected under 35 U.S.C. § 103 as being unpatentable over Greenberg in view of Gold and Prins.

Claim 22 stands rejected under 35 U.S.C. § 103 as being unpatentable over Greenberg in view of Prins.

Claims 4 and 7 through 14 stand rejected under 35 U.S.C. § 103 as being unpatentable over Park in view of Greenberg.

Claims 5, 6, 15, and 16 stand rejected under 35 U.S.C. § 103 as being unpatentable over Park in view of Greenberg and Gold.

Reference is made to the Examiner's Answer (Paper No. 17, mailed January 14, 2000) for the examiner's complete reasoning in support of the rejections, and to appellant's Brief (Paper No. 16, filed November 3, 1999) and Reply Brief (Paper No. 18, filed March 13, 2000) for appellant's arguments thereagainst.

OPINION

We have carefully considered the claims, the applied prior art references, and the respective positions articulated by appellant and the examiner. As a consequence of our review, we will affirm the anticipation rejection of claim 1 and reverse the obviousness rejections of claims 2 through 26.

Regarding claim 1, Greenberg shows in Figure 1, a synchronization section, followed by an identification section, further followed by a data and error correction code section. Figure 2 indicates that the identification portion further includes a displacement.

Appellant argues (Brief, pages 26-28) that the ID field of Greenberg includes a "DISPLACEMENT" subpart which includes synchronization information. Appellant (Brief, page 26) directs us to Greenberg's statement in column 3, lines 7-9, that "displacement is a number which completes the information needed to calculate the physical address from the logical address." Appellant asserts that Greenberg's definition of displacement indicates that the ID field includes synchronization information, which is contrary to the requirements of claim 1.

As the examiner states (Answer, page 12),

> Greenberg et al describes the displacement information as "the number of defective sectors between some reference point and the physical sector" and "the offset from the beginning of the track to beginning of the logical track." Greenberg et al does not teach or suggest that the displacement information is sync or timing information. Hence, Greenberg et al does teach the first subpart of the data information containing all the sync information,

as recited in claim 1. Also, as Greenberg discloses synchronization information, the fact that he uses a different

term, displacement, for other information suggests that displacement differs from synchronization. Accordingly, we agree with the examiner that Greenberg discloses the first subpart of the data information containing all of the synchronization information, and, thus, that claim 1 is anticipated by Greenberg.

We reach a different conclusion for the obviousness rejections. As to the rejection of claims 2, 3, and 17 through 26, the examiner explains (Answer, page 4) that although Greenberg fails to teach the second subpart of the data region including a data address mark, Gold discloses such a mark. The examiner contends that "[i]t would have been obvious ... to modify the teachings of Greenberg et al to include the teachings of Gold, motivation being to provide an improved disk format as set forth in col. 2 lines 45-48 of Gold."

After reviewing the referenced portion of Gold we find no nexus between the inclusion of a data address mark and the "improved disk format." In fact, we find no suggestion or motivation in either reference to add the claimed data address mark to the second subpart data region of Greenberg. Consequently, we cannot sustain the obviousness rejection of claims 2, 3, and 17 through 26 over Greenberg in view of Gold.

For claim 25, the examiner (Answer, page 9) adds Prins to the combination of Greenberg and Gold. Since Prins fails to cure the deficiencies of the primary combination, we cannot sustain the obviousness rejection of claim 25 over Greenberg, Gold, and Prins.

The examiner (Answer, pages 8-9) rejects claim 22 over Greenberg in view of Prins, pointing for motivation to combine to Prins' teaching (column 5, lines 46-58) to eliminate the sector ID field from the header associated with each sector to eliminate both micro-positioning during normal write operations and also offsetting of a duplicate header. However, Greenberg states (column 2, lines 14-20) that the combination of the ID field and the data field associated with a sector reduces sector overhead (the goal of the invention) because "the one sync field and the read/write gap eliminated are larger than the amount of information that must be added to the ID field." Thus, the examiner's proposed combination would eliminate the ID field that must be modified for Greenberg's invention, thereby destroying the function of Greenberg invention. The Federal Circuit has held that "a proposed modification [is] inappropriate for an

obviousness inquiry when the modification render[s] the prior art reference inoperable for its intended purpose." ***In re Fritch***, 23 USPQ2d 1780, n. 12, *citing* ***In re Gordon***, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). Accordingly, we cannot sustain the obviousness rejection of claim 22 over Greenberg in view of Prins.

Regarding the obviousness rejection of claims 4 and 7 through 14 over Park in view of Greenberg, appellant argues that Park fails to disclose the claimed servo timing generator (see Brief, pages 10-13), the claimed mode selection signal generator (see Brief, pages 13-16), and the claimed pre-amplifier and read/write channel circuit (see Brief, pages 16-19). Appellant further challenges the combination of Park and Greenberg (see Brief, page 19). Although we do not necessarily agree with all of appellant's arguments, for the reasons which follow, we agree at least that Park fails to disclose the claimed mode selection signal generator, that Greenberg fails to remedy this shortcoming, and that the claims, therefore, would not have been obvious over the combination of Park and Greenberg.

Claim 4 recites, in pertinent part, "a mode selection signal generator coupled to receive said read gate input signal and said

write gate input signal from said disk data controller, for generating a read gate output signal and a write gate output signal." The examiner (Answer, pages 5-6) asserts that elements 28 and 20 together form the claimed mode selection signal generator. We disagree.

Park's elements 20 and 28 are the WID reader and the disc data controller, respectively. As shown in Figure 7, WID reader 20 receives the read gate input signal from the disk data controller, thereby satisfying part of the requirements for the mode selection signal generator. However, pre-amplifier 12, not disk data controller 28, receives the write gate input signal *from the disk data controller*, as required by claim 4. To find that the disk data controller receives signals that it generates would be ridiculous. Therefore, elements 20 and 28 cannot form the claimed mode selection signal generator as proposed by the examiner. Further, although element 12 receives the write gate input signal from the disk data controller, pre-amplifier 12 does not generate a write gate output signal, and therefore fails to meet other limitations for the mode selection signal generator. Upon review of Park, we find that no element or combination of elements would satisfy all of the limitations claimed for the mode selection signal generator.

Greenberg was relied upon by the examiner (Answer, page 6) for the structure of the data sector. Greenberg adds nothing to the teachings of Park to cure the deficiencies thereof. Therefore, we cannot sustain the obviousness rejection of claims 4 and 7 through 14 over Park in view of Greenberg. In addition, as Gold does not remedy the above-noted shortcomings of the primary combination of Park and Greenberg, we cannot sustain the obviousness rejection of claims 5, 6, 15, and 16 over Park in view of Greenberg and Gold.

CONCLUSION

The decision of the examiner rejecting claim 1 under 35 U.S.C. § 102(b) is affirmed. The decision of the examiner rejecting claims 2 through 26 under 35 U.S.C. § 103 is reversed. Thus, the examiner's decision is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART

LEE E. BARRETT Administrative Patent Judge	)
JOSEPH F. RUGGIERO Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
ANITA PELLMAN GROSS Administrative Patent Judge	)

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