

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

Paper No. 42

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SIAMACK NEMAZIE and JOHN SCHADEGG

Appeal No. 99-0243
Application 08/434,457¹

ON BRIEF

Before FLEMING, KRASS and DIXON, **Administrative Patent Judges.**

FLEMING, **Administrative Patent Judge.**

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 63, 64 and 67-74, all of the claims pending in the present application. Claims 1-62 have been canceled. Claims 65, 66 and 75-76 have been withdrawn from consideration by the Examiner as directed to a nonelected invention.

¹ Application for patent filed May 2, 1995.

The invention relates to a hard disk drive controller with defect management for automatic track processing (specification, page 15, lines 17-19). Defect information for tracks are written into the header of every sector disk sector (specification, page 15, lines 17-19; figure 13). Physical sector number information is provided by the storage system and not stored within any of the sectors. A logical sector number within a track is determined by taking a physical sector number provided by the system, reading the defect list from a sector of a track, and generating a corresponding logical sector number corresponding to the physical sector number (specification, page 20, line 31 to page 23, line 28).

Independent claim 63 is reproduced as follows:

63. In a data storage system comprising multiple media surfaces, each surface having a plurality of concentric tracks divided into a plurality of sectors each having a sequential physical sector number representing the number of the sector on a respective one of the plurality of concentric tracks, a plurality of cylinders each being formed from a given location of tracks on different media surfaces, physical sector number information provided by the storage system and not stored within any of the plurality of sectors, each sector comprising:

an identifier portion including a head number and a defective sector list of sector numbers for all sectors on a respective one of the plurality of concentric tracks which are to be skipped; and

a data portion for storing data,

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the data storage system further comprising:

means for receiving a physical sector number from the data storage system and for reading the defect list from a sector of a track and for outputting a logical sector number corresponding to the physical sector number.

The Examiner relies on the following references:

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|------------------------------|--------------|---------------|
| Greenberg et al. (Greenberg) | 4,656,532 | Apr. 7, 1987 |
| Hikita | JP-58-219658 | Dec. 21, 1983 |

Claims 63, 64 and 67-74 stand rejected under 35 U.S.C. § 103 as being unpatentable over Greenberg in view of Hikita.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the Brief² and the Examiner's Answer³ for the respective details thereof.

OPINION

We will not sustain the rejections of claims 63, 64 and 67-74 under 35 U.S.C. § 103.

The Examiner has failed to set forth a **prima facie** case. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the prior art, or by implications contained in such teachings

² The Brief was received May 5, 1997.

³ The Examiner's Answer was mailed July 17, 1997.

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or suggestions. ***In re Sernaker***, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). The Federal Circuit states that “[t]he mere fact that the prior art may be modified in the manner suggested by Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.” ***In re Fritch***, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), ***citing In re Gordon***, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

Appellants argue that neither Greenberg nor Hikita teaches or suggests generating logical sectors from physical sectors, as set forth in each of the pending independent claims on appeal. Appellants point out that Hikita teaches a technique for generating target sector numbers and not for locating actual sector numbers. In addition, Appellants assert⁴ that Hikita is useful in the operation of multiple hard drives of differing formats and is not for translating sectors within a track or segment to compensate for defective sectors.

In the answer⁵, the Examiner admits that Greenberg does not translate a physical sector number into a logical sector number,

⁴ Brief, page 10.

⁵ Pages 3-4.

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but teaches providing both the cylinder information and the actual physical sector number within the sector. The Examiner then points to Hikita's disclosure of a circuit 15 for converting a physical sector number into a logical sector number, and asserts that it would have been obvious to one of ordinary skill in this art to have applied Hikita's teaching to Greenberg in order to enable a computer to access a disk solely on the basis of logical addresses.

In response to Appellants' argument that neither Greenberg nor Hikita teaches or suggests generating logical sectors from physical sectors, the Examiner asserts that Hikita clearly teaches physical to logic sector conversion, and element 15 of Hikita is marked as a physical-logical sector number conversion circuit.

"Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." **Para-Ordinance**, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239, **citing W. L. Gore & Assocs.**, 721 F.2d 1551, 1553, 220 USPQ 311, 312-13. In addition, our reviewing court requires the PTO to make specific findings on a suggestion to combine prior art references. **In re Dembiczak**, 175 F.3d 994, 1000-01, 50 USPQ2d 1614, 1617-19 (Fed.

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Cir. 1999).

We are not inclined to dispense with proof by evidence when the proposition at issue is not supported by a teaching in a prior art reference or shown to be common knowledge of unquestionable demonstration. Our reviewing court requires this evidence in order to establish a **prima facie** case. **In re Piasecki**, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984); **In re Knapp-Monarch Co.**, 296 F.2d 230, 232, 132 USPQ 6, 8 (CCPA 1961); **In re Cofer**, 354 F.2d 664, 668, 148 USPQ 268, 271-72 (CCPA 1966). Furthermore, our reviewing court states in **In re Piasecki**, 745 F.2d at 1472, 223 USPQ at 788 (Fed. Cir. 1984) the following:

The Supreme Court in *Graham v. John Deere Co.*, 383 U.S. 1 (1966), focused on the procedural and evidentiary processes in reaching a conclusion under Section 103. As adapted to ex parte procedure, Graham is interpreted as continuing to place the "burden of proof on the Patent Office which requires it to produce the factual basis for its rejection of an application under section 102 and 103". Citing *In re Warner*, 379 F.2d 1011, 1020, 154 USPQ 173, 177 (CCPA 1967).

Turning first to Appellants' claim 63, we note that lines 7-9 of the preamble of this claim recite, "physical sector number information provided by the storage system and not stored within any of the plurality of sectors". Lines 1-4 of the first

subparagraph of this claim recite "a defective sector list of sector numbers for all sectors on a respective one of the plurality of concentric tracks which are to be skipped". The final subparagraph of this claim recites "means for receiving a physical sector number from the data storage system and for reading the defect list from a sector of a track and for outputting a logical sector number corresponding to the physical sector number".

As regards the preamble recitation of "physical sector number information provided by the storage system and not stored within any of the plurality of sectors", we note that Greenberg does not store the physical number information in the "storage system" but provides the information in sectors on the tracks⁶. Although Hikita shows physical sectors disk attributes stored in register 16, it does not provide for "a defective sector list of sector numbers for all sectors on a respective one of the plurality of concentric tracks which are to be skipped" as recited in first subparagraph of claim 63.

We find, after a careful review of the record, no teaching or suggestion why one of ordinary skill in this art with these

⁶ See, inter alia, figures 1 and 2, and column 3.

references before him would have been motivated to modify Greenberg's sector identification method by using a physical sector disk attribute register as shown by Hikita, while using the defective sector list on the sectors of the disk as disclosed by Greenberg. These are two distinct modes of information storage, and without Appellants' disclosure as a guide, it is not apparent why one skilled in this art would modify the teachings of Greenberg by changing only the physical sector number information storage means and not the storage means of other data. Similarly, it is also not apparent why one skilled in the art who did adopt physical sector number information storage means outside of the disk **per se**, would not adopt external storage as taught by Hikita to the defect list, and place both types of information on the same storage media.

In addition, the sole motivating factor presented by the Examiner⁷ for combining the references is to enable a computer to access a disk solely on the basis of logical addresses. This motivation is contrary to Greenberg's approach which uses cylinder data and physical sector numbers within the sector for the derivations of logical sectors on physical sectors.

⁷ Answer, page 4.

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In regard to independent claims 64 and 67, we note that these claims contain substantially the same dispositive limitations discussed above in regard to independent claim 63. Since the Examiner's rejection is the same for these claims, the rejection of these claims falls with the rejection of claim 63.

Therefore, we will not sustain the rejections of claims 63, 64 and 67-74 under 35 U.S.C. § 103 as being unpatentable over Greenberg in view of Hikita.

Accordingly, the Examiner's decision is reversed.

REVERSED

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| MICHAEL R. FLEMING |) | |
| Administrative Patent Judge |) | |
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| ERROL A. KRASS |) | BOARD OF PATENT |
| Administrative Patent Judge |) | APPEALS AND |
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