

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

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Paper No. 29

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte JONG-HO PARK

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Appeal No. 1998-0601  
Application 08/225,322<sup>1</sup>

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HEARD: April 20, 2000

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Before BARRETT, RUGGIERO, and LALL, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

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<sup>1</sup> Application for patent filed April 8, 1994.

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This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1, 2, 4-6, 11, 12, and 15. Claims 3, 7-10, 13, 14, and 16-19 stand withdrawn by the Examiner as being directed to a nonelected species.

We affirm-in-part.

#### BACKGROUND

The disclosed invention is directed to a driving method and apparatus for an optical read/write drive.

Claim 1 is reproduced below.

1. In an optical read/write device of the type having a light source element in an optical pickup for reading and writing data from and to an optical disk, a driving method for said light source element comprising the steps of:

determining whether an abnormal tracking error occurs based on a tracking error signal generated in accordance with the movement of the optical pickup; and

supplying the light source element with a drive signal having a level suitable for a data read operation, independent of the driving mode of the optical pickup, thereby operating the optical pickup at a power level suitable for reading data, when an abnormal tracking error occurs.

The Examiner relies on the admitted prior art (APA) at pages 1-3 of the specification and figure 1, and on the following prior art:

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Maeda et al. (Maeda)	4,554,652	November 19, 1985
Miura et al. (Miura)	4,669,072	May 26, 1987
Horie	5,181,194	January 19, 1993
Yoshimoto et al. (Yoshimoto)	5,251,194	October 5,
1993		(filed April 12,
1990)		
Ishida et al. (Ishida)	5,351,225	September 27, 1994
1992)		(filed May 1,

Claims 1, 2, 4-6, 11, 12, and 15 stand rejected under 35 U.S.C. § 103 as being unpatentable over the APA in view of any one of Yoshimoto, Ishida, Horie, Maeda, or Miura.

We refer to the first Office action (Paper No. 7), the Final Rejection (Paper No. 10), and the Examiner's Answer (Paper No. 20) (pages referred to as "EA\_\_"), and the Supplemental Examiner's Answer (Paper No. 25) for a statement of the Examiner's position and to the Amended Appeal Brief (Paper No. 19) (pages referred to as "Br\_\_") and the Reply Brief<sup>2</sup> (Paper No. 21) (pages referred to as "RBr\_\_") for a statement of Appellant's arguments thereagainst.

#### OPINION

We find the references to be representative of the level of ordinary skill in the art. See In re Oelrich, 579 F.2d 86,

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<sup>2</sup> Entered pursuant to the Decision on Petition mailed July 14, 1997 (Paper No. 24).

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91, 198 USPQ 210, 214 (CCPA 1978) ("the PTO usually must evaluate both the scope and content of the prior art and the level of ordinary skill solely on the cold words of the literature"); In re GPAC Inc., 57 F.3d 1573, 1579, 35 USPQ2d 1116, 1121 (Fed. Cir. 1995) (the Board did not err in adopting the approach that the level of skill in the art was best determined by the references of record).

Furthermore, obviousness is determined through the eyes of one of ordinary skill in the art and one of ordinary skill in the art must be presumed to know something about the art apart from what the references expressly disclose. See In re Jacoby, 309 F.2d 513, 516, 135 USPQ 317, 319 (CCPA 1962); In re Oetiker, 977 F.2d 1443, 1447-48, 24 USPQ2d 1443, 1446-47 (Fed. Cir. 1992) (Nies, C.J., concurring).

The APA discloses that it was known to provide a mode selector 101 that generates a mode signal M for reading or writing based on user selection. Reference power data generator 102 generates different reference power data PREF for reading or writing in accordance with the mode signal M. The reference power data suitable for a reading/writing of a given optical disk is recorded in the disc's lead-in area for

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reading and use by the reference power generator, which is recited in claims 4 and 11. The reference power data P<sub>REF</sub> is applied to a drive signal generator 103 where it is converted into a read or write driving signal DR and then applied to a light source element. In this conventional apparatus, the light source element is operated at constant power irrespective of pickup position. Consequently, if a tracking error occurs during writing, the previously recorded data is lost by overwriting additional data. The APA does not disclose "operating the optical pickup at a power level suitable for reading data, when an abnormal tracking error occurs" as recited in claim 1 and in similar limitations in claims 4 and 11.

Claims 1, 2, 4-6, 11, 12, and 15 over APA  
and one of Yoshimoto, Ishida, Horie, or Maeda

Yoshimoto (col. 14, lines 63-68), Ishida (col. 5, lines 41-59), Horie (col. 3, lines 11-16), and Maeda (col. 4, lines 45-53; col. 7, lines 54-58) disclose that it was known to interrupt the recording operation when the tracking error exceeds either a positive or negative threshold value to avoid the problem of erroneously recording over already recorded

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areas. Although these references are directed to overcoming the same problem as addressed by Appellant, as argued by Appellant (Br8-10), they only show stopping the writing operation, not operating the optical pickup at a reduced power level corresponding to the level suitable for reading data. The Examiner argues that references teach reducing the power level to below a write level (EA4). This is true, but what is missing in the references is some teaching of reducing the power level rather than just interrupting the recording operation (Yoshimoto), cutting off the recording signal (Maeda), cutting off the laser (Ishida), or stopping the input of data (Horie). For this reason, we conclude that the Examiner has failed to establish a prima facie case of obviousness. The rejections of claims 1, 2, 4-6, 11, 12, and 15 based on the APA and one of Yoshimoto, Ishida, Horie, or Maeda are reversed.

Claims 1, 2, and 4-6 over APA and Miura

Claims 1, 2, and 4-6 are grouped to stand or fall together (Br5). Claim 1 is analyzed as representative.

Miura discloses that the energy of the laser is lower in a read mode than a write mode (col. 2, lines 25-28). Miura recognizes that tracking control in the prior art is defective in that when there is a tracking error "other information will be recorded on the track having information recorded thereon already or such information will be erroneously recorded on a track on which it is not to be recorded" (col. 3, lines 61-64). Miura discloses control means generating a control signal for reducing or interrupting the output energy of the light beam generated from the recording means when the tracking failure detection circuit generates a tracking failure to inhibit recording of information (e.g., col. 4, lines 21-28; col. 6, line 64 to col. 7, line 12). We interpret this to teach that the power level can be reduced to a range between zero (if the power is interrupted) and a safe level at which writing cannot occur. The actual write level may be greater than the upper end of this range to ensure a high enough power for reliable writing. The actual read level is less than or equal to the upper end of the range since it is known that the read level is a power level that will not record.

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Because Miura discloses decreasing the power level to a range of values that includes a power level suitable for reading data, the claim recitation of reducing the power level specifically to a "level suitable for a data read operation" is within the range and, thus, the combination of the APA and Miura is sufficient to establish a prima facie case of obviousness. We note that a "level suitable for a data read operation" may be a range of values and is not necessarily a single specific value. Furthermore, a "level suitable for a data read operation" does not require that reading actually be performed. The burden is on Appellant to show that the specific claimed level within the range disclosed by Miura is critical and provides unexpected results. See In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

In addition, we consider that the selection of the read level in the case of an abnormal tracking error would have been obvious to one of ordinary skill in the art. There are really only three possible values or ranges that one of ordinary skill in the art might select from for the disclosed decreased or interrupted power level: (1) off (interrupted); (2) a range between off and the minimum reliable read level;

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and (3) a range of read levels from some minimum reliable read value to some maximum value that safely will not write (a range of power levels suitable for reading data). The selection of any of these three levels would have been suggested to one skilled in the art. Further, since Miura uses a single laser as a light source for the tracking control and focusing control as well as to read and write data, one of ordinary skill in the art would have been motivated to reduce the power level to a read level because this is a standard laser operating level and would maintain the laser power level for tracking control and focusing control which is necessary for continuous operation. That is, if the power level was turned off or reduced to a level below the read level after an abnormal tracking error, the power level would need to be restored to the read level to continue operations of tracking, focusing, and reading addresses and one of ordinary skill in the art would have sought to avoid these interruptions.

Appellant argues that Miura provides no guidance with which to select a particular power level, much less suggesting that it be reduced to a level suitable for reading data (Br15; RBr6). However, since the claimed "level suitable for a data

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read operation" is within the range taught by Miura, the limitation is prima facie obvious over Miura.

Appellant argues (Br15-16):

Appellant further submits that by supplying a power level suitable for reading data when an abnormal tracking error occurs, the present invention is capable of reading data stored on the disc, thereby providing the capability to detect address data from the data read from the optical disc by the optical pickup and to determine whether the detected address data corresponds to a desired address. Such a capability allows the state of the error signal to be converted to a nonactive state, and accordingly writing could resume. See page 3, lines 26-33 and page 9, lines 5-15. Since Mirua [sic] et al., or any of the other applied references, neither teaches nor suggests that data could be read when an abnormal error occurs, it is respectfully submitted that a person of ordinary skill in the art would not have been motivated to combine the teachings as asserted by the Examiner

The Examiner concludes that the argument is not commensurate in scope with the claims which do not recite any structure for performing these functions to provide the advantage (EA5). Appellant responds that the claims recite providing a level suitable for a data read operation and, therefore, would allow for a data read operation to be performed (RBr9-10). Appellant further argues that claim 11 recites a generator for generating a reading drive signal and a selector for selecting the reading drive signal if an error

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signal is active and, hence, "claim 11 recites structure for reading data from the disc, thereby allowing address information to be read from the disc to provide for determining if the read data corresponds to a desired address" (RBr10).

Miura does read addresses (col. 2, lines 48-53). The claims do not recite reading data after an abnormal tracking error even though data may be capable of being read because the power level is at a level suitable for reading data. Thus, we agree with the Examiner that the argument is not commensurate in scope with the claims and is not persuasive.

Appellant argues that the Examiner mischaracterizes the statements in the Brief in asserting that Miura fairly suggests the use of any level less than a write level, including a level suitable for a data read operation, and that Miura does not disclose selecting a level suitable for reading data (RBr3-6).

It is true that Miura does not disclose that the reduced power level should be a read level. However, Miura discloses a range of reduced power levels that includes the claimed read level, which is sufficient to establish a prima facie case of

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obviousness absent a showing of criticality and unexpected results. In addition, we have discussed that one of ordinary skill in the art would have been motivated to select the read level in order to maintain tracking control and focus control for continuous operation.

Appellant argues that "Miura et al. discloses an extremely broad range of values to which the current supplied to the diode could be reduced" (RBr7), which includes an infinite number of levels. Appellant analogizes the situation to that in In re Baird, 16 F.3d 380, 29 USPQ2d 1550 (Fed. Cir. 1994), which held that "[a] disclosure of millions of compounds does not render obvious a claim to three compounds, particularly when that disclosure indicates a preference leading away from a claimed compounds," id. at 383, 29 USPQ2d at 1552.

We do not consider Baird to be an apt comparison. There is no question that every value in the range disclosed by Miura will work and that Appellant's value is within the range. We consider the situation analogous to cases where the prior art discloses a range of values and the applicant has claimed a value within the range.

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Appellant argues that Miura does not suggest reducing the power level to a level suitable for a data read operation, since decreasing the power to such level is not necessarily an optimum level to disable an information recording function and operating a level suitable for a data read allows for an entirely different function to be performed (RBr8-9).

We consider it sufficient to establish a prima facie case that Miura discloses a range of decreased power levels that includes Appellant's claimed level. Furthermore, we have discussed why one of ordinary skill in the art would have been motivated to select the read level as the decreased power level in order to maintain continuity of operation.

For the reasons stated above, we conclude that the combination of the APA and Miura is sufficient to establish a prima facie case of obviousness. The rejection of claims 1, 2, and 4-6 is sustained.

Claims 11, 12, and 15 over APA and Miura

Claims 11 and 12 stand or fall together and dependent claim 15 is separately argued (Br5).

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The function of "selecting the reading drive signal if the error signal is active ..." in claim 11 is considered to have been obvious for the reasons stated in connection with the limitation "operating the optical pickup at a power level suitable for reading data, when an abnormal tracking error occurs" in the analysis of claim 1.

Appellant further argues that Miura does not teach or suggest a selector for selecting between two different signals (Br17). The Examiner states that the "combination inherently must provide a selector ... [to] provide selection between different levels based upon an input control signal and within the obvious combination the noted input control signal would indicate write/read level selection" (EA5-6). Appellant responds that inherency requires more than the mere possibility that a certain thing may result and "it is not necessary to provide a bi-level selector to perform [sic] the decreasing function, nor is it the natural result flowing from a teaching of decreasing the supply current" (RBr12). Appellant argues that decreasing the current could be performed in other ways such as analog means for continuously decreasing the current.

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It is true that inherency requires that something necessarily be so. It would have been safer for the Examiner to rely on obviousness reasoning rather than inherency. Nevertheless, the limitation of "a selector for selecting the reading drive signal if the error signal is active and otherwise selecting between the reading drive signal and the writing drive signal based on the mode signal" is not in means-plus-function format so as to require specific structure and we find that the function is taught by the combination of the APA and Miura. When the tracking error is inactive, Miura selects between the read and write levels based on the mode signal as further expressly taught in the APA. When the tracking error is active, Miura teaches selecting a decreased power level from a range including the read level using the control signal from 32. Claim 11 does not require more. Even if the control signal in Miura continuously decreased the current instead of using a bi-level switch (no matter how unlikely that possibility may be), eventually it would select a decreased power level, which is all that is required.

For the reasons stated above, the rejection of claims 11 and 12 is sustained.

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As to claim 15, Appellant argues that Miura does not disclose a logic operator and multiplexer. The Examiner sole reasoning is that "the use of logic operators in selectors was well established" (EA6).

We agree with the Examiner that, as a general proposition, logic operators were well known. However, this does not address the obviousness of using the error signal and the mode signal to produce a selecting signal. Furthermore, the Examiner has said nothing about the multiplexer. Every limitation must be considered in addressing obviousness. See In re Wilder, 429 F.2d 447, 450, 166 USPQ 545, 548 (CCPA 1970); In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). The APA does not show generation of two separate drive signals DR-R and DR-W from separate drive signal generators as in figure 4, one of which is selected by a multiplexer as shown in figure 6. For these reasons, we conclude that the Examiner has failed to establish a prima facie case of obviousness with respect to claim 15. The rejection of claim 15 is reversed.

#### CONCLUSION

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The rejections of claims 1, 2, 4-6, 11, 12, and 15 over the APA and Yoshimoto, Ishida, Horie, or Maeda are reversed.

The rejection of claims 1, 2, 4-6, 11, and 12 over the APA and Miura is sustained and the rejection of claim 15 over the APA and Miura is reversed.

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

AFFIRMED-IN-PART

LEE E. BARRETT	)	
Administrative Patent Judge	)	
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	)	BOARD OF PATENT
JOSEPH F. RUGGIERO	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
PARSHOTAM S. LALL	)	
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