The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 43

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ARIYOSHI NAKAOKI, KENJI YAMAMOTO,
AKIRA KOUCHIYAMA and AKIRA SUZUKI

Appeal No. 2004-0288
Application No. 09/173,747[1]

ON BRIEF

Before HAIRSTON, BARRY and SAADAT, Administrative Patent Judges.
SAADAT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the Examiner's final rejection of claims 37-71 and 75. Claims 1-36, 72-74 and 76 have been canceled.

We reverse.

BACKGROUND

Appellants' invention is directed to an optical device used in recording or reproducing information signals for an optical

[1] Application for patent filed October 16, 1998, which claims the foreign filing priority benefit under 35 U.S.C. § 119 of Japanese Applications No. P09-285455, P09-285451 and P09-285452, all filed October 17, 1997.

recording medium, such a magneto-optical disc. As depicted in Figure 6, the Magneto-optical head includes an objective lens assembly (41 and 42) which converges the incident light toward a center opening in a magnetic field generating coil (specification, pages 28-30). An understanding of the invention can be derived from a reading of exemplary independent claim 37, which is reproduced as follows:

> 37. An optical device comprising:
>
> light converging means, said light converging means converging light onto a photomagnetic recording layer of an optical recording medium;
>
> magnetic field generating means between said light converging means and said optical recording medium,
>
> said magnetic field generating means having a light transmitting center hole, said light transmitting center hole having a center hole diameter,
>
> said light incident upon said magnetic field generating means having a beam diameter greater than said center hole diameter,
>
> said light passing through said light transmitting center hole having a beam diameter equal to said center hole diameter.

The Examiner relies on the following references:

U.S. Patents

Lee et al. (Lee)	5,105,408	Apr. 14, 1992
Miyagawa et al. (Miyagawa)	5,235,581	Aug. 10, 1993
Hasegawa et al. (Hasegawa)	5,293,360	Mar. 8, 1994
Kodama et al. (Kodama)	5,470,491	Nov. 28, 1995
Arimoto et al. (Arimoto)	5,576,098	Nov. 19, 1996

Watanabe et al. (Watanabe)	5,784,343	Jul. 21, 1998 (filed Sep. 16, 1991)
McDaniel et al. (McDaniel)	5,903,525	May 11, 1999 (filed Apr. 18, 1997)
Knight et al. (Knight)	6,243,350	Jun. 5, 2001 (filed Apr. 29, 1997)

Japanese Kokai[2]

Hinode	59-043570	Mar. 10, 1984
Iwabuchi et al. (Hiroshi)	04-076844	Mar. 11, 1992

Claims 37-46, 49, 50, 54-56, 58, 65, 66, 68-71 and 75 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Knight, McDaniel and Lee.

Claim 48 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Knight, McDaniel and Lee and further in view of Official Notice as supported by Hinode.

Claims 51-53 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Knight, McDaniel and Lee and further in view of Hiroshi.

Claims 57 and 60-64 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Knight, McDaniel and Lee and further in view of Arimoto and Hasegawa.

Claim 59 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Knight, McDaniel, Lee, Arimoto and Hasegawa and further in view of Kodama.

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[2] Translations of these references (provided by the USPTO Translation Branch) are relied upon and have been included in previous office actions.

Claim 67 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Knight, McDaniel and Lee and further in view of Watanabe or Miyagawa.[3]

We make reference to the answer (Paper No. 34, mailed April 9, 2003) for the Examiner's reasoning and to the appeal brief (Paper No. 31, filed January 21, 2003) and to the reply brief (Paper No. 35, filed June 9, 2003) for Appellants' arguments thereagainst.

OPINION

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of presenting a prima facie case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). In considering the question of the obviousness of the claimed invention in view of the prior art relied upon, the Examiner is expected to make the factual determination set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. See also In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998). The Examiner must

[3] We note that the Examiner has withdrawn all the claim rejections under the first and the second paragraphs of 35 U.S.C. § 112 and the claim rejections over Ishizaki (answer, page 2).

not only identify the elements in the prior art, but also show "some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead the individual to combine the relevant teachings of the references." In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Such evidence is required 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).

Appellants argue that neither Knight, nor McDaniel contains any teaching or suggestion relevant to the diameter of the incident light being greater than the center hole diameter and the diameter of passing light being equal to said center hole diameter, as recited in claim 37 (brief, pages 25 & 26). Additionally, Appellants point out that although Figures 2 and 4 of Lee show the lens and coil configuration, Lee fails to teach or suggest the relationship between the center hole diameter and the diameter of the incident light and the passing light (brief, page 26).

The Examiner responds to Appellants' arguments by stating that McDaniel discloses the dimensions of the yoke and coil while Lee teaches the diameter range of the beam (answer, page 10). The portions of McDaniel (col. 11, lines 15-31) and Lee (col. 6, lines 10-16) relied on by the Examiner disclose the innermost

dimensions of the coil to be less than 25 and 20 microns in two different directions and a beam diameter of 1-3 mm, respectively. However, absent any evidence or reasoning to show a connection between the two references, we are unconvinced that comparing the beam diameter of Lee and the coil opening of McDaniel conclusively establishes the claimed relationship of the incident and passing beams diameters with respect to the coil opening dimension.

The Examiner then points to the discussion of the refraction index of SIL (Solid Immersion Lens) in Knight and how it affects the numerical aperture of an optical system to support the combination of the references (answer, page 10). Again, we do not agree with the Examiner that Knight's discussion of using SIL, which achieves a smaller spot size for the focused beam, teaches or suggest the claimed relationship based on the specific dimensions taught by McDaniel and Lee. While selecting such particular type of lens may affect the size of the focused beam, concluding that the claimed relationship between the coil opening and the incident and the passing light would also be obtained require us to rely on considerable speculation instead of a factual basis. "Where the legal conclusion [of obviousness] is not supported by the facts it cannot stand." In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967).

Additionally, the Examiner relies on a “formula” in Knight for computing the beam size at the recording layer to be 26 microns and concludes that, when coupled with the 25-micron coil opening of Lee, teaches the claimed relationship between the center hole diameter and the diameter of the incident light and the passing light (id.). However, a review of Knight reveals that the portion of Knight identified by the Examiner (col. 35, starting at line 50) merely lists the parameters of a typical optical system without using them in any formula for calculating the beam spot size. What a reference teaches is a question of fact. In re Baird, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994) (citing In re Beattie, 974 F.2d 1309, 1311, 24 USPQ2d 1040, 1041 (Fed. Cir. 1992)). Here the Examiner’s conclusion is predicated on a line of reasoning that is not supported by any factual evidence and is therefore, insufficient to prima facie establish that the diameter of the incident light is greater than the coil center hole diameter and the diameter of passing light is equal to said center hole diameter, as recited in claim 37.

We note that claim 75 also include similar limitations related to the relationship between the coil opening and the incident light and the passing light which, as discussed above with respect to claim 37, are absent in the prior art. Accordingly, since the Examiner has failed to meet the burden of

providing a prima facie case of obviousness, the 35 U.S.C. § 103 rejection of claims 37-46, 49, 50, 54-56, 58, 65, 66, 68-71 and 75 over Knight, McDaniel and Lee cannot be sustained.

With respect to the rejection of the remaining claims, the Examiner further relies on Hinode, Hiroshi, Arimoto, Hasegawa, Watanabe and Miyagawa. However, none of these references overcomes the deficiencies of Knight, McDaniel and Lee, alone or in combination, as discussed above with respect to claim 37. Therefore, we do not sustain any of the 35 U.S.C. § 103 rejections of claims 47, 48, 51-53, 57, 59-64 and 67.

CONCLUSION

In view of the foregoing, the decision of the Examiner rejecting claims 37-71 and 75 under 35 U.S.C. § 103 is reversed.

REVERSED

KENNETH W. HAIRSTON Administrative Patent Judge	)	
LANCE LEONARD BARRY Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
MAHSHID D. SAADAT Administrative Patent Judge	)	

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