

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte FUMIHIRO TAWA

Appeal 2008-3419
Application 10/974,162
Technology Center 1700

Decided: July 29, 2008

Before BRADLEY R. GARRIS, CHUNG K. PAK, and
TERRY J. OWENS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

The Appellant appeals from a rejection of claims 1-10 and 13-15,
which are all of the pending claims.

THE INVENTION

The Appellant claims a multilayer optical recording medium and a
storage device for recording and/or reproducing to/from the optical
recording medium. Claim 10 is illustrative:

10. A storage device for recording and/or reproducing information to/from a multilayer optical recording medium including a plurality of set structures each consisting of a recording layer, a photochromic layer, and an optical waveguide layer stacked in this order from the irradiation side of a light beam for recording/reproducing information, said storage device comprising:

a rotating mechanism for rotating said multilayer optical recording medium;

a first optical head for directing a first light beam having a center wavelength λ_1 to said multilayer optical recording medium to record/reproduce information to/from an arbitrary one of said recording layers; and

a second optical head for directing a second light beam having a center wavelength λ_2 different from said center wavelength λ_1 to a selected one of said optical waveguide layers;

said first optical head being located in a region where said second light beam directed from said second optical head propagates in said selected optical waveguide layer,

wherein said first optical head has a first objective lens for focusing said first light beam on said arbitrary recording layer, and said second optical head has a second objective lens for focusing said second light beam on said selected optical waveguide layer,

said storage device further comprising;

a first photodetector for detecting reflected light of said first light beam reflected on said photochromatic layer whose reflectance has been increased by said second light beam propagating in said selected optical waveguide layer;

a first focus error signal generating circuit for generating a focus error signal for said first objective lens according to an output from said first photodetector;

a first objective lens driving circuit for driving said first objective lens according to an output from said first focus error signal generating circuit;

a second photodetector for detecting reflected light of said second light beam;

a second focus error signal generating circuit for generating a focus error signal for said second objective lens according to an output from said second photodetector; and

a second objective lens driving circuit for driving said second objective lens according to an output from said second focus error signal generating circuit.

THE REFERENCES

Mizuno	US 6,069,860	May 30, 2000
Yajima (Hideo) ¹ (as translated)	JP 13-184641	Jul. 6, 2001
Ueda	US 6,418,108 B1	Jul. 9, 2002
Yonezawa	US 2002/1054582 A1	Oct. 24, 2002
Yamashita	US 6,628,593 B1	Sep. 30, 2003
Akiyama	US 2005/1035218 A1 (effective filing date Oct. 5, 1999)	Jun. 23, 2005

THE REJECTIONS

The claims stand rejected as follows: claims 1, 3-5 and 7 under 35 U.S.C. § 112, first paragraph, enablement requirement; claims 1-9 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter the applicant regards as the invention; claim 10 under 35 U.S.C. § 102(b) over Mizuno;

¹ The Examiner (Ans. 4) and the Appellant (Br. 7) refer to Yajima as “Hideo”. For consistency, we likewise do so.

claims 10 under 35 U.S.C. § 102(b) over Yamashita; claims 10 and 14 under 35 U.S.C. § 102(b) over Yonezawa; claims 10 and 13 under 35 U.S.C. § 103 over Yamashita or Yonezawa, in view of Ueda; claims 10 and 14 under 35 U.S.C. § 103 over Akiyama; claims 10, 14 and 15 under 35 U.S.C. § 103 over Akiyama in view of Hideo; and claims 10, 13 and 14 under 35 U.S.C. § 103 over Akiyama in view of Ueda.²

OPINION

We reverse the Examiner's rejections.

Rejection under 35 U.S.C. § 112, first paragraph

A specification complies with the 35 U.S.C. § 112, first paragraph, enablement requirement if it allows those of ordinary skill in the art to make and use the claimed invention without undue experimentation. *See In re Wright*, 999 F.2d 1557, 1561 (Fed. Cir. 1993); *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, 750 F.2d 1569, 1576 (Fed. Cir. 1984).

The Appellant's original Specification discloses a multilayer optical recording medium having first and second optical waveguide layers as required by the Appellant's claims 1, 3-5 and 7 (Spec. 17; fig. 1). The inner edge of each waveguide layer has an inclined surface that enables a light beam to be introduced into the waveguide layer such that the layer functions as a waveguide (Spec. 18, 26; figs. 1, 4).

The Examiner argues that the Appellant's original disclosure does not provide enablement except for placing the waveguide layer access along the inner radius of the optical recording medium (Ans. 4, 9). For other

² Rejections of claim 10 under 35 U.S.C. § 102(b) over Katayama (US 5,093,821), and claims 10 and 13 under 35 U.S.C. § 103 over Katayama in view of Ueda are withdrawn in the Examiner's Answer (Ans. 3).

embodiments, the Examiner argues, “undue experimentation would be needed to bring the light into the waveguiding layer so that it is waveguided (Snell’s Law)” (Ans. 10).

The Examiner has not provided evidence that more than routine experimentation would be required for one of ordinary skill in the art to introduce light beams so as to provide propagation of the light beams through the Appellant’s waveguide layers. The Examiner’s mere assertion is insufficient for providing a *prima facie* case of lack of enablement as to the Appellant’s claims 1, 3-5 and 7.

Rejection under 35 U.S.C. § 112, second paragraph

The relevant inquiry under 35 U.S.C. § 112, second paragraph, is whether the claim language, as it would have been interpreted by one of ordinary skill in the art in light of the Appellant’s Specification, sets out and circumscribes a particular area with a reasonable degree of precision and particularity. *See In re Moore*, 439 F.2d 1232, 1235 (CCPA 1971).

The Examiner argues that “[c]laims 1 and 7 should indicate that the order of the layers are recited from the side of the laser incidence” (Ans. 5), and that “[t]he waveguide layers should indicate that they direct the second light beam **into** the photochromic layer, which causes the photochromic layer to become more reflective.” *See id.*

The Examiner does not point to any language in the Appellant’s claims that the Examiner considers to be unclear. Hence, the Examiner has not established a *prima facie* case of indefiniteness of the Appellant’s claims 1-9.

Rejection of claim 10 under
35 U.S.C. § 102(b) over Mizuno

“Anticipation requires that every limitation of the claim in issue be disclosed, either expressly or under principles of inherency, in a single prior art reference.” *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1255-56 (Fed. Cir. 1989).

The portion of Mizuno relied upon by the Examiner is Mizuno’s discussion of a prior art device (Ans. 6). That device includes two optical heads (70, 83), each of which records/reproduces information to/from a different disk (10, 11) (col. 1, l. 64 – col. 2, l. 5; fig. 12).

The Examiner argues (Ans. 11):

In the applicant’s invention, both optical heads are on the same side of the recording medium (see figure 2), which is the same orientation found in figure 12 of Mizuno et al.. Therefore the dual head system taught by Mizuno et al. meets the claim, it is just that there is no waveguiding layer present, and none is required as the optical recording medium is not part of the device.

Although the storage device claimed in the Appellant’s claim 10 does not include an optical recording medium, the claim requires that the first optical head is capable of focusing a first light beam on an arbitrary recording layer, and that the second optical head is capable of focusing a second light beam on a selected optical waveguide layer. The Examiner has not established that the prior art device disclosed by Mizuno, wherein each optical head focuses light on a different disk, has that capability. Hence, the Examiner has not established a *prima facie* case of anticipation of the invention claimed in the Appellant’s claim 10 over Mizuno.

Rejection of claim 10 under
35 U.S.C. § 102(b) over Yamashita

Yamashita discloses a disk drive having an optical head (3) for CDs and an optical head (4) for DVDs (col. 3, ll. 24-26). The two optical heads operate simultaneously to determine what type of disk has been loaded, and then the appropriate head starts the read or write operation and the other head is halted (col. 5, ll. 36-52).

The Examiner points out that Yamashita's two optical heads operate simultaneously to identify the disk (Ans. 6). The Examiner, however, does not establish that one optical head is capable of focusing a first light beam on an arbitrary recording layer, and that the second optical head is capable of focusing a second light beam on a selected optical waveguide layer. The Examiner, therefore, has not established a *prima facie* case of anticipation of the invention claimed in the Appellant's claim 10 over Yamashita.

Rejection of claims 10 and 14 under
35 U.S.C. § 102(b) over Yonezawa

Yonezawa discloses an optical disk apparatus having a first optical system that "allows information recording/reproduction using a laser beam having a wavelength ranging from 650 nm to 780 nm, and is used for reproduction of a CD or DVD or recording/reproduction of a DVD-RAM or DVD-R or DVD-RW" (¶ 0041), and a second optical system that "allows information recording/reproduction using a laser beam having a wavelength of around 400 nm, and has a surface recording density higher than a DVD or the like". *See id.* After disk discrimination to determine the type of disk (¶ 0043), "[t]he first and second optical systems are selectively used to

reproduce/record information from/on these two or more different optical disks using a plurality of laser beams having different wavelengths” (¶ 0041).

The Examiner argues that Yonezawa’s optical heads have different focus control circuitry (23, 28) and operate independently (Ans. 13).

The Examiner has not established that one of Yonezawa’s optical heads is capable of focusing a first light beam on an arbitrary recording layer, and that the other optical head is capable of focusing a second light beam on a selected optical waveguide layer. Thus, the Examiner has not established a *prima facie* case of anticipation of the invention claimed in the Appellant’s claim 10 and its dependent claim 14 over Yonezawa.

Rejection of claims 10 and 13 under 35 U.S.C. § 103
over Yamashita or Yonezawa, in view of Ueda

The Examiner does not rely upon Ueda for any disclosure that remedies the above-discussed deficiencies in Yamashita and Yonezawa as to claim 10, and does not explain how the claim requirements missing from Yamashita and Yonezawa would have been *prima facie* obvious to one of ordinary skill in the art over Yamashita or Yonezawa, alone or in combination with Ueda (Ans. 7, 14). Hence, the Examiner has not established a *prima facie* case of obviousness of the inventions claimed in the Appellant’s claim 10 and its dependent claim 13 over Yamashita or Yonezawa, in view of Ueda.

Rejection of claims 10 and 14 under
35 U.S.C. § 103 over Akiyama

Akiyama discloses a recording/reproducing apparatus having, in one embodiment (fig. 1), optical heads (8a, 8b) arranged at almost the same radial position with respect to a rotation center such that information is recorded/reproduced from two layers (3, 5) simultaneously, thereby doubling the speed of information transfer (¶ 0018). In another embodiment (fig. 3) a guide groove in a first recording layer (3) is formed spirally from the recording medium's inner radius toward the outer radius, and a guide groove in a second recording layer (5) is formed spirally from the recording medium's outer radius toward the inner radius (¶ 0024). One optical head records/reproduces information to/from the first recording layer at the same time as another optical head records/reproduces information to/from the second recording layer, such that the total of the linear velocities of the two optical heads is almost constant to provide an almost constant recording density. *See id.*

The Examiner argues that Akiyama's optical heads are independent of each other and allow accessing different layers (Ans. 15).

As pointed out above, Akiyama's optical heads either record/reproduce at the same radial position, or one of them records/reproduces by spiraling inwardly while the other spirals outwardly. The Examiner has not established that one of Akiyama's optical heads is capable of focusing a first light beam on an arbitrary recording layer, and that the other optical head is capable of focusing a second light beam on a selected optical waveguide layer, or that Akiyama would have rendered that

capability *prima facie* obvious to one of ordinary skill in the art. The Examiner, therefore, has not established a *prima facie* case of obviousness of the invention claimed in the Appellant's claim 10 or its dependent claim 14 over Akiyama.

Rejections under 35 U.S.C. § 103 of claims 10, 14 and 15
over Akiyama in view of Hideo, and claims 10, 13 and 14
over Akiyama in view of Ueda

The Examiner does not rely upon Hideo or Ueda for any disclosure that remedies the above-discussed deficiency in Akiyama as to claim 10 (Ans. 8, 9, 15-17). Thus, the Examiner has not established a *prima facie* case of obviousness of the inventions claimed in the Appellant's claim 10 and its dependent claims 14 and 15 over Akiyama in view of Hideo, or claim 10 and its dependent claims 13 and 14 over Akiyama in view of Ueda.

DECISION

The rejections of claims 1, 3-5 and 7 under 35 U.S.C. § 112, first paragraph, enablement requirement, claims 1-9 under 35 U.S.C. § 112, second paragraph, claim 10 under 35 U.S.C. § 102(b) over Mizuno, claim 10 under 35 U.S.C. § 102(b) over Yamashita, claims 10 and 14 under 35 U.S.C. § 102(b) over Yonezawa, claims 10 and 13 under 35 U.S.C. § 103 over Yamashita or Yonezawa, in view of Ueda, claims 10 and 14 under 35 U.S.C. § 103 over Akiyama, claims 10, 14 and 15 under 35 U.S.C. § 103

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over Akiyama in view of Hideo, and claims 10, 13 and 14 under 35 U.S.C. § 103 over Akiyama in view of Ueda are reversed.

REVERSED

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