Trials@uspto.gov
Tel: 571-272-7822

Paper 43
Entered February 2, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LG ELECTRONICS, INC. and LG ELECTRONICS U.S.A., INC.,
Petitioner,

v.

TOSHIBA SAMSUNG STORAGE TECHNOLOGY KOREA CORPORATION,
Patent Owner.

Case IPR2015-01653
Patent RE43,106 E

Before KALYAN K. DESHPANDE, MICHAEL R. ZECHER, and TREVOR M. JEFFERSON, *Administrative Patent Judges.*

DESHPANDE, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
Inter Partes Review
35 U.S.C. § 318(a); 37 C.F.R. § 42.73

I. INTRODUCTION

A. Background

LG Electronics, Inc. and LG Electronics U.S.A., Inc. ("Petitioner") filed a Petition requesting an *inter partes* review of claims 7–19 of U.S. Patent No. RE43,106 E (Ex. 1001, "the '106 patent"). Paper 1 ("Pet.").

Pursuant to 35 U.S.C. § 314, we instituted *inter partes* review of the '106 patent, on February 5, 2016, under 35 U.S.C. § 103(a), as to claims 7–19 on the basis that these claims would have been obvious over APA[1] and Katayama.[2] Paper 7 ("Dec.").

Patent Owner filed a Response (Paper 22, "PO Resp."), and Petitioner filed a Reply (Paper 26, "Pet. Reply"). A consolidated oral hearing was held on October 6, 2016, and the hearing transcript has been entered in the record. Paper 42 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. Pursuant to our jurisdiction under 35 U.S.C. § 6, we conclude, for the reasons discussed below, Petitioner has shown by a preponderance of the evidence that claims 7–19 of the '106 patent are unpatentable under 35 U.S.C. § 103(a).

---

[1] The '106 patent includes Admitted Prior Art ("APA") describing a conventional optical pickup apparatus and a thin-film type variable aperture. *See* Ex. 1001, 1:58–3:29, Figs. 1, 2. We consider APA as a relevant admission by Toshiba of the background knowledge of a person of ordinary skill in the art at the time of the invention of the '106 patent. For simplicity, we refer to APA and its disclosure generally in our analysis that follows.

[2] U.S. Patent No. 5,696,750, issued on December 9, 1997 (Ex. 1002) ("Katayama").

B. Related Proceedings

The parties indicate that the '106 patent is involved in the following district court cases: (1) *LG Electronics, Inc. v. Toshiba Samsung Storage Technology Korea Corp.*, Case No. 1:12-cv-01063 (LPS) (D. Del.); and (2) *Toshiba Samsung Storage Technology Korea Corp. v. LG Electronics, Inc.*, Case No. 1:15-cv-0691 (LPS) (D. Del.). Pet. 2; Paper 6, 1.

C. The '106 Patent

The '106 patent describes an optical pickup apparatus that can compatibly record information on, and read information from, a digital video disk (DVD) and a recordable compact disk (CD-R) using a holographic lens. Ex. 1001, 1:28–34. The optical pickup apparatus is set forth in Figure 3 of the '106 patent as follows:

FIG. 3

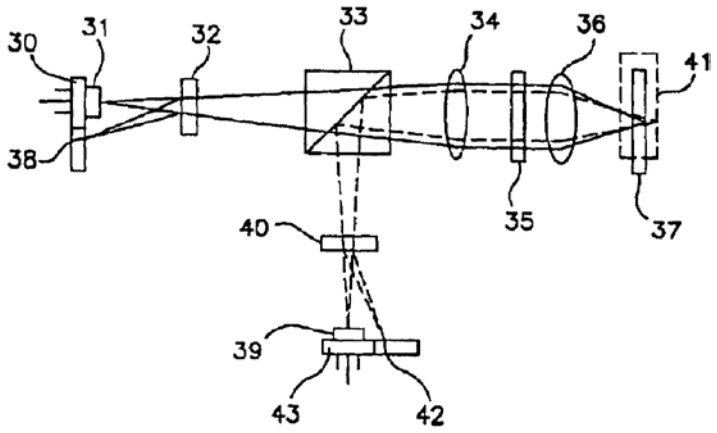

Figure 3 shows an optical system of an optical pickup according to one embodiment. *Id*. at 4:33–34. The optical pickup apparatus includes laser light sources 31 and 39 for emitting light beams having different wavelengths. *Id*. at 4:34–37. Laser light source 31 emits a wavelength of 650 nm, suitable for a DVD. *Id*. at 4:55–59. Laser light source 39 emits a

light beam having a 780 nm wavelength suitable for a CD-R. *Id*. at 4:61–67. Holographic beam splitters 32 and 40 alter the optical path of the light beams reflected from information recording surfaces, beam splitter 33 completely transmits or reflects the incident light beam according to wavelength, and collimating lens 34 collimates the incident light beam to be in a parallel form. *Id*. at 4:34–47. Holographic lens 35 diffracts the incident light beam according to its wavelength, and objective lens 36 focuses the light beams on the respective information recording surfaces of optical disks 37 and 41. *Id*.

Holographic lens 35 selectively diffracts the incident light beam in order to prevent the generation of spherical aberration with regard to the light beam's focus on the information recording surfaces of optical disks 37 and 41. *Id*. at 5:6–10. The relationship between holographic lens 35, objective lens 36, and optical disks 37 and 41 is illustrated in Figure 4A of the '106 patent as follows:

FIG. 4A

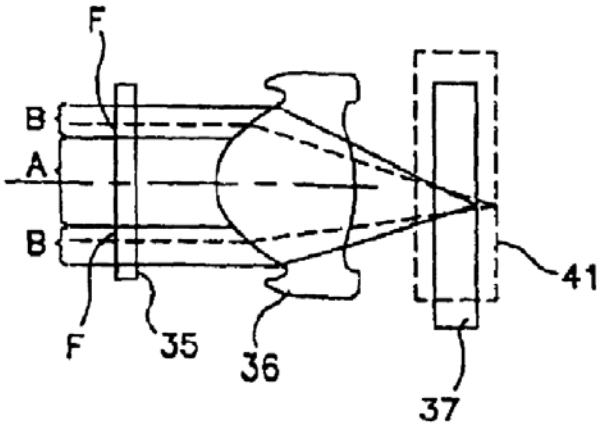

Figure 4A describes that objective lens 36 is partitioned into regions A and B. *Id*. at 5:13–14. Region A is closer to the optical axis of objective

lens 36 and has little effect on spherical aberration, whereas region B is farther from the optical axis of objective lens 36 and has a large effect on spherical aberration. *Id*. at 5:14–18. Objective lens 36 is most appropriate for an optical disk having a thin thickness, such as a DVD. *Id*. at 5:18–20. The light beam incident to region A passes through objective lens 36 without any diffraction by holographic ring lens 35 and is focused directly on the disk. *Id*. at 5:33–36. The light beam incident to region F is wavelength-selectively diffracted by holographic ring lens 35 and then proceeds to objective lens 36. *Id*. at 5:36–39.

D. Illustrative Claim

Petitioner challenges claims 7–19 of the '106 patent. Pet. 4–60. Claim 7 is the only independent claim at issue, and claims 8–19 directly or indirectly depend from independent claim 7. Claim 7 is illustrative of the claims at issue and is reproduced below:

> 7. An objective lens to form beam spots of different sizes using corresponding first and second light beams of respectively different wavelengths, the objective lens comprising:
>
> an inner region including an optical center of the objective lens which has an optical property optimized to focus the first light beam onto a first optical recording medium of a first thicknesses and to focus the second light beam onto a second optical recording medium of a second thickness other than the first thickness; and
>
> a diffractive region surrounding said inner region and comprising an optical property optimized so as to selectively diffract the first and second light beams as a function of wavelength so as to change a numerical aperture of the objective lens.

Ex. 1001, 8:18–8:31.

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.