Trials@uspto.gov
571-272-7822

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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 IPR2015-01644
Patent 6,785,065 B1

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

ZECHER, *Administrative Patent Judge.*

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

I. BACKGROUND

Petitioner, LG Electronics, Inc. and LG Electronics U.S.A., Inc. (collectively, "LG"), filed a Petition requesting an *inter partes* review of claims 1–9 of U.S. Patent No. 6,785,065 B1 ("the '065 patent," Ex. 1001). Paper 1 ("Pet."). Patent Owner, Toshiba Samsung Storage Technology Korea Corporation ("Toshiba"), filed a Preliminary Response. Paper 7 ("Prelim. Resp."). Taking into account the arguments presented in Toshiba's Preliminary Response, we determined that the information presented in the Petition established that there was a reasonable likelihood that LG would prevail in challenging claims 1–9 of the '065 patent as unpatentable under 35 U.S.C. § 103(a). Pursuant to 35 U.S.C. § 314, we instituted this *inter partes* review on January 29, 2016, as to all the challenged claims. Paper 8 ("Dec. on Inst.").

During the course of trial, Toshiba filed a Patent Owner Response (Paper 21, "PO Resp.") and LG filed a Reply to the Patent Owner Response (Paper 24, "Pet. Reply"). A consolidated oral hearing was held on October 6, 2016, and a transcript of the hearing is included in the record. Paper 38 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–9 of the '065 patent. For the reasons discussed below, we hold that LG has demonstrated by a preponderance of the evidence that these claims are unpatentable under § 103(a).

A. Related Matters

The ’065 patent is involved in the following district court cases: (1) *LG Electronics, Inc. v. Toshiba Samsung Storage Technology Korea Corp.*, No. 1:12-cv-01063 (LPS) (D. Del.); and (2) *Toshiba Samsung Storage Technology Korea Corp. v. LG Electronics, Inc.*, No. 1:15-cv-0691 (LPS) (D. Del.). Pet. 4; Paper 6, 1. In addition to this Petition, LG filed another petition challenging the patentability of a certain subset of claims in U.S. Patent No. 6,721,110 B2 (“the ’110 patent”), which is a parent of the ’065 patent. Pet. 5. In that case, we instituted an *inter partes* review as to claims 40–45, 47, and 48 of the ’110 patent. *LG Elecs., Inc. v. Toshiba Samsung Storage Tech. Korea Corp.*, Case IPR2015-01642 (PTAB Jan. 29, 2016) (Paper 8).

B. The ’065 Patent

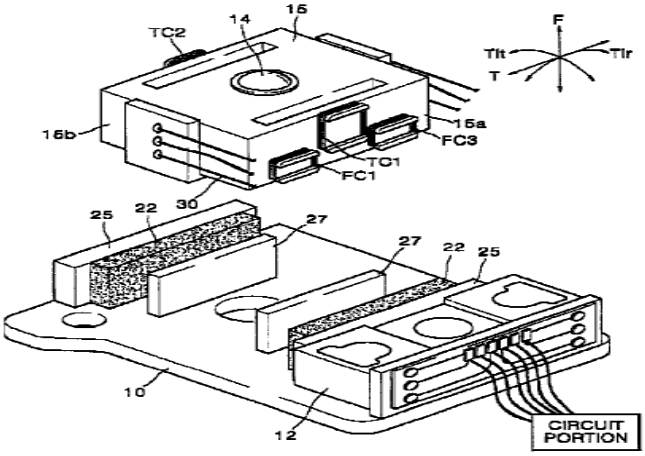
The ’065 patent, titled “Optical Pickup Actuator Driving Method and Apparatus Therefor,” issued August 31, 2004, from U.S. Patent Application No. 10/772,339, filed on February 6, 2004. Ex. 1001, at [54], [45], [21], [22]. The ’065 patent is a continuation of U.S. Patent Application No. 10/173,958, filed on June 19, 2002—now the ’110 patent. *Id*. at [63]. The ’065 patent also claims foreign priority to Korean Patent Application No. 2001-34687, filed on June 19, 2001. *Id*. at [30].

As the title suggests, the ’065 patent generally relates to an apparatus and method of driving an optical pickup actuator in which focus, track, and tilt coils drive the optical pickup actuator in focus, track, and tilt directions, respectively. Ex. 1001, 1:16–21. These coils are provided at two sides of a

bobbin to secure the remaining sides of the bobbin, and also to allow the focus coil to be used as the tilt coil. *Id*. at 1:22–24. According to the '065 patent, a conventional optical pickup actuator is very small and uses all four side surfaces of the bobbin to install the focus, track, or tilt coils. *Id*. at 2:57–59, Fig. 1. Consequently, it becomes very difficult to install the necessary wiring in such a small space. *Id*. at 2:60–63, Fig. 1. In addition, when these coils are arranged on all four side surfaces of the bobbin, the wiring of the coils becomes more complicated. *Id*. at 2:65–66, Fig. 1.

The '065 patent addresses these problems by arranging the focus, track, and tilt coils on just two side surfaces of the bobbin in a manner that secures a sufficient space provided at the other side surfaces of the bobbin, and also allows the focus and tilt direction to be controlled together by a single coil. Ex. 1001, 3:10–18. Figure 3 of the '065 patent, reproduced below, illustrates an optical pickup actuator according to one embodiment of the invention. *Id*. at 4:44–46, 5:9–10.

FIG. 3



As shown in Figure 3, the optical pickup actuator includes base 10, holder 12 located on one side of the base, bobbin 15 suspended over the base, objective lens 14 mounted on the bobbin, and a magnetic driving portion that drives the bobbin in focus, tilt, and track directions. Ex. 1001, 5:10–15. The magnetic driving portion further includes at least one focus and tilt coil FC1–FC4 and at least one track coil TC1, TC2 at each of opposite side surfaces 15a of bobbin 15. *Id*. at 5:16–18. Magnets 22 are installed to face the at least one focus and tilt coil and at least one track coil provided on each of the opposite side surfaces. *Id*. at 5:18–21.

C. Illustrative Claim

Of the challenged claims, claim 1 is the only independent claim at issue. Independent claim 1 is directed to an optical recording or reproducing apparatus for use with transferring information with respect to a recording medium. Claims 2–9 directly or indirectly depend from independent claim 1. Independent claim 1 is illustrative of the challenged claims and is reproduced below:

> 1. An optical recording and/or reproducing apparatus for use with transferring information with respect to a recording medium, comprising:
>
> a spindle motor rotating the recording medium;
>
> an optical pickup including an objective lens and an actuator which actuates the objective lens so as to transfer the information with respect to the recording medium; and
>
> a control unit driving the spindle motor and the optical pickup to transfer information with respect to the recording medium and controlling the actuator of the optical pickup in the radial, track, tilt and focusing directions;
>
> wherein the actuator comprises:

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