

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 IPR2015-01659  
Patent 7,367,037 B2

---

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

JEFFERSON, *Administrative Patent Judge*.

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

## I. INTRODUCTION

LG Electronics, Inc. and LG Electronics U.S.A., Inc. (collectively “Petitioner” or “LG”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1, 5, 8–11, 15–18, and 22 of U.S. Patent No. 7,367,037 B2 (Ex. 1001, “the ’037 patent”). On February 5, 2016, we instituted *inter partes* review of claims 1, 5, 8–11, 15–18, and 22 of the ’037 patent on the basis that these claim would have been unpatentable as obvious under 35 U.S.C. § 103(a). Paper 8 (“Dec. on Inst.”).

Toshiba Samsung Storage Technology Korea Corporation (“Patent Owner” or “Toshiba”), filed a Patent Owner’s 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 40 (“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 1, 5, 8–11, 15–18, and 22 of the ’037 patent are unpatentable as obvious under 35 U.S.C. § 103(a).

### A. *Related Proceedings*

The parties report the following pending litigation matter related to the ’037 patent: (1) *LG Electronics, Inc., v. Toshiba Samsung Storage Technology Korea Corp.*, Case No. 1:12-cv-01063 (D. Del.); (2) *Toshiba Samsung Storage Technology Korea Corp., v. LG Electronics, Inc.*, Case No. 1:15-cv-691 (D. Del.). Pet. 3; Paper 6, 1.

*B. The '037 Patent*

The '037 patent discloses a conventional disk player, turntable, clamper, and spindle motor that incorporates a self-compensating dynamic balancer for restricting internal vibrations from the eccentric center of gravity of a disk. Ex. 1001, 1:24–33. The '037 patent describes a typical disc player as prior art, which contains a turntable, clamper, spindle motor, rotational shaft, deck plate, and buffering members. *Id.* at 1:41–59, Fig. 1.

A disk player embodying the invention of the '037 patent is illustrated in Figure 2, reproduced below.

FIG. 2

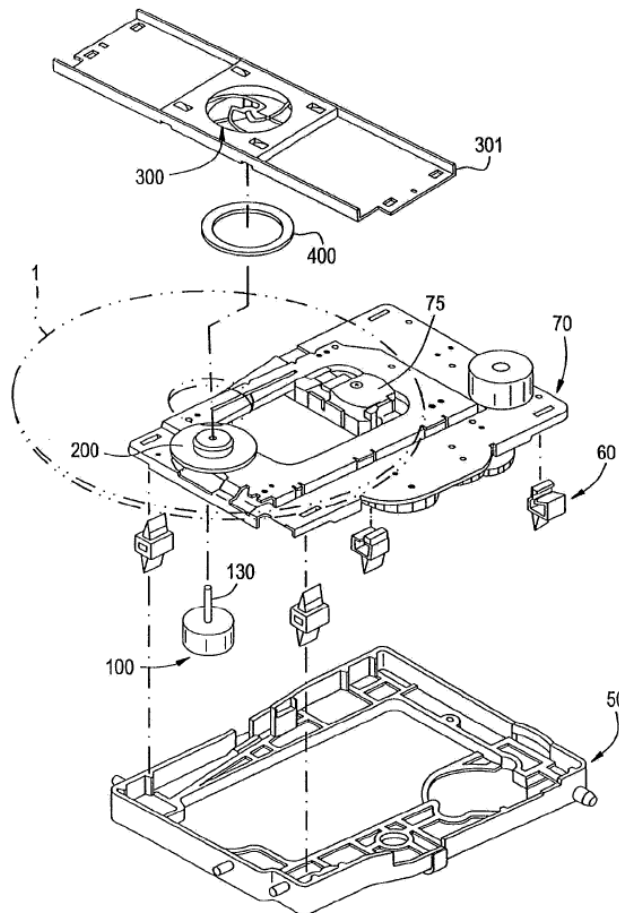


Figure 2 shows deck base 50, deck plate 70, buffering members 60, spindle motor 100, turntable 200, and clamper 300 similar to those noted in a typical disk player. *Id.* at 5:4–12, 1:41–59, Fig. 1. Figure 2 also depicts self-compensating dynamic balancer 400, which prevents eccentric rotation of rotational shaft 130 of spindle motor 100 caused by the eccentric center of gravity of disc 1. *Id.* 5:12–15.

The '037 patent specification states that:

a method of dampening internal vibrations generated by the rotation of the spindle motor [] due to an eccentric center of gravity of the disk is not taken into consideration [by buffering members which protect from external impacts]. In such a case, the eccentric center of gravity of the disk is caused by a discrepancy between the rotational center of the disk and the center of gravity of the disk due to errors in the manufacturing process of the disk. Thus, the rotational shaft of the spindle motor [] exhibits an orbital revolution due to wobbling of the rotational shaft.

Such orbital revolution of the rotational shaft of the spindle motor does not effect a low-speed disk player such as a 1x or 2x type. However, in the case of a high-speed model . . . , the effects of the orbital revolution of the rotational shaft of the spindle motor become serious making the recording/reproducing of information difficult.

*Id.* at 1:62–2:11.

The '037 patent solves this problem of the orbital revolution wobbling (caused by the discrepancy between the rotational center of the disk and the center of gravity of the disk) by “incorporating a self-compensating dynamic balancer [400], which is employed in a disk player so that the internal

vibrations due to an eccentric center of gravity of a disk can be limited” at either the turntable, clamper, or spindle motor. *Id.* at 2:26–45.

*C. Illustrative Claim*

Independent claim 1 is illustrative of the challenged claims and reproduced below:

1. A self-compensating dynamic balancer apparatus for a disk player which records and reproduces information from a disk installed on said disk player, said apparatus comprising:

a self-compensating dynamic balancer comprising:

a non-magnetic hollow tube; and

a mobile unit which comprises at least one rigid body and is disposed within said non-magnetic hollow tube,

wherein said self-compensation dynamic balancer is locatable coaxial with a rotation axis about which said disk is rotated by rotational components of said disk player,

wherein said self-compensation dynamic balancer rotates in use with at least one of rotational components,

wherein said mobile unit is arranged to be freely movable within said non-magnetic hollow tube by centrifugal force generated by rotation of said disk such that the center of gravity of said self-compensating dynamic balancer moves to be located opposite to the center of gravity of said disk with respect to said rotation axis when an angular frequency of the disk is greater than a natural frequency of a deck plate of the disk player,

wherein the natural frequency of the deck plate is determined by an elastic modulus of buffering members of the disk player and mass of the deck plate and other elements to be installed on the deck plate, and represents a rate of vibration in a horizontal direction, and

# 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.