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Paper 7
Entered: October 12, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HUTCHINSON TECHNOLOGY INC.,
HUTCHINSON TECHNOLOGY OPERATIONS (Thailand) CO., LTD.,
Petitioner,

v.

NITTO DENKO CORPORATION,
Patent Owner.

Case IPR2017-01422
Patent 6,841,737

Before THOMAS L. GIANNETTI, CHRISTA P. ZADO, and MELISSA A. HAAPALA, *Administrative Patent Judges.*

GIANNETTI, *Administrative Patent Judge.*

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

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I. INTRODUCTION

Hutchinson Technology Incorporated and Hutchinson Technology Operations (Thailand) Co., Ltd. ("Petitioner") filed a Petition requesting an *inter partes* review of claims 1–7 of U.S. Patent No. 6,841,737 (Ex. 1001, "the '737 patent"). Paper 2 ("Pet."). Nitto Denko Corporation ("Patent Owner") filed a Preliminary Response. Paper 6 ("Prelim. Resp.").

We have authority to determine whether to institute an *inter partes* review under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the petition "shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition."

For the reasons set forth below, we decline to institute an *inter partes* review of the '737 patent.

II. BACKGROUND

A. The '737 Patent

The '737 patent is directed to an improved "flying lead" for use with a flexible circuit board that connects the read/write head of a hard disk drive to other electronic components. Prelim. Resp. 1. A "flying lead" is a type of terminal that allows for the connection of electrical components to the circuit board. *Id.* Unlike a traditional terminal that is only accessible from the board's top, a flying lead is not covered by insulating material either from above or below. *Id.* This type of lead allows for a higher density of components, and facilitates the use of ultrasonic vibrations to bond components to the terminal. *Id.*

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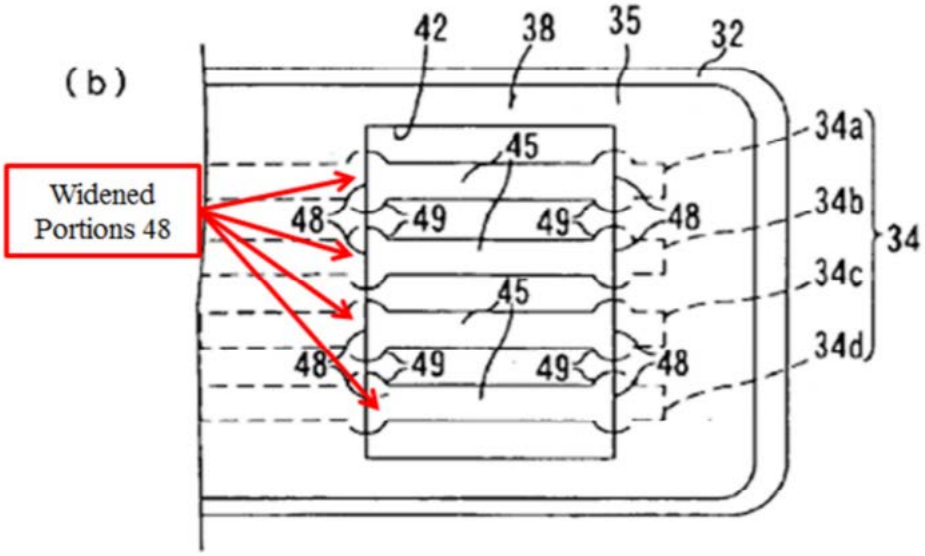
Because the lead is exposed and not supported from below by insulating material, it is structurally weak at the point where the lead's conductive material intersects with the edges of the opening in the surrounding insulating and supporting layers. *Id.* To address this problem, the '737 patent discloses the use of various reinforcements. *Id.*

One solution is providing reinforcing portions wherein the conductive pattern of the flying lead terminal "has widened portions formed to extend in a widthwise direction." Ex. 1001, 2:47–51; 2:60–64. In a second solution, "the first insulating layer and/or the second insulating layer have projections projecting from ends of the opening" onto the terminals to support them. *Id.* 3:22–26; 3:41–47.

Figures 11(b) and 12(b) from the patent, as annotated in the Petition (at p. 14), illustrate these two solutions. Annotated Figure 11(b) follows:



Pet. 14.

Figure 11(b) is an annotated plan view of the external-side connecting terminal of a suspension circuit board embodiment, showing lines of wire 34 for connecting to a magnetic head and read/write board formed as an

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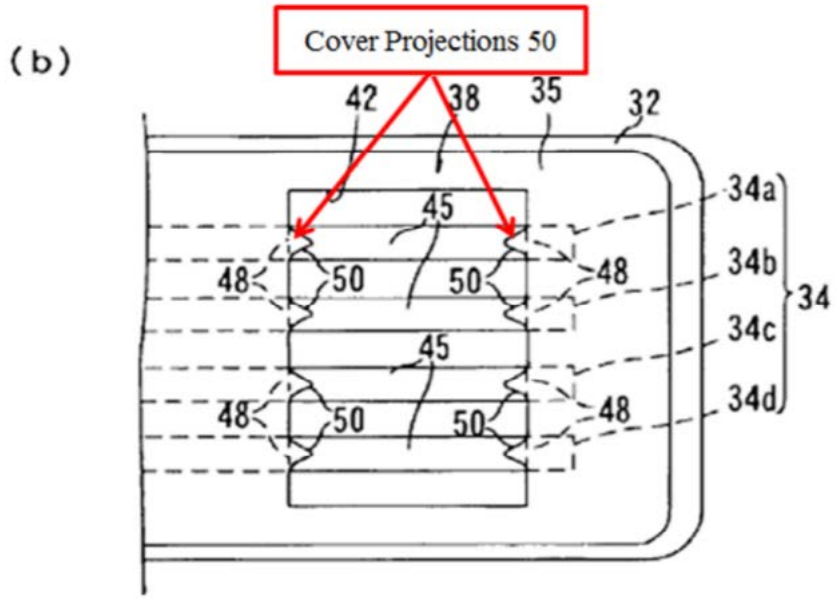
external circuit. Ex. 1001, 5:3–8; 10:32–35. In this embodiment, widened portions are provided as reinforcing portions in conductive pattern 34. *Id.* 13:56–61.

Annotated Figure 12(b) below illustrates a second embodiment:



Pet. 14.

Figure 12(b) is an annotated plan view of the external-side connecting terminals of another suspension board embodiment. Ex. 1001, 5:9–14. In this embodiment cover-side projections 50 are formed to project from the ends of the cover-side opening 42 onto the conductive pattern 34. *Id.* 14:66–15:1.

B. Challenged Claims

Claims 1, 3, 4, and 6 are independent. Claims 3 and 4 are directed to the first embodiment illustrated in Fig, 11(b), *supra*. Claim 6 is directed to the second embodiment illustrated in Fig. 12(b), *supra*. Claim 1 is broadly

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directed to a wired circuit board with either of the two solutions illustrated above. Pet. 15. Claim 1 follows:

> 1. A wired circuit board comprising a metal supporting layer, a first insulating layer formed on the metal supporting layer, a conductive pattern formed on the first insulating layer, a second insulating layer formed on the conductive pattern, and an opening, formed at the same position of the conductive pattern, for allowing the metal supporting layer and the first insulating layer, and the second insulating layer to open, so as to form a terminal portion in which front and back sides of the conductive pattern are exposed,
>
> wherein at least any one of the first insulating layer, the second insulating layer and the conductive pattern has reinforcing portions for reinforcing the conductive pattern formed at the ends of the opening in crossing areas where ends of the opening and the conductive pattern cross each other.

C. Real Parties in Interest

Petitioner identifies the following additional real parties in interest:

1. Magnecomp Precision Technology Public Company Limited
2. Magnecomp Corporation
3. Headway Technologies, Inc.
4. TDK Corporation
5. TDK U.S.A. Corporation
6. SAE Magnetics (Hong Kong) Limited
7. Acrathon Precision Technologies (HK) Limited
8. Acrathon Precision Technologies (Dong Guan) Co., Ltd

Pet. 5–6. Patent Owner identifies no additional real parties in interest. Paper 4, 1.

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