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Paper 12
Entered: September 13, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

SCRAMOGE TECHNOLOGY LTD.,
Patent Owner.

IPR2022-00573
Patent 7,825,537 B2

Before JAMESON LEE, KRISTINA M. KALAN, and MICHELLE N. WORMMEESTER, *Administrative Patent Judges*.

WORMMEESTER, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314
Dismissing Motion for Joinder
35 U.S.C. § 315(c); 37 C.F.R. § 42.122

I. INTRODUCTION

Apple Inc. ("Petitioner") filed a Petition (Paper 2, "Pet.") requesting *inter partes* review of claims 1–22 and 28 of U.S. Patent No. 7,825,537 B2 (Ex. 1001, "the '537 patent"). Petitioner additionally filed a Motion for Joinder (Paper 3, "Joinder Motion" or "Joinder Mot.") seeking to join this proceeding with *Fantasia Trading LLC d/b/a Ankerdirect v. Scramoge Technology Ltd.*, IPR2022-00499 ("the Anker IPR"), which also concerns the '537 patent. Scramoge Technology Ltd. ("Patent Owner") filed a Preliminary Response (Paper 9, "Prelim. Resp."). With our authorization provided in an e-mail dated June 22, 2022, Petitioner filed a preliminary Reply (Paper 10, "Reply") to Patent Owner's Preliminary Response, and Patent Owner filed a preliminary Sur-reply (Paper 11, "Sur-reply") to Petitioner's preliminary Reply. We have jurisdiction under 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a). Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted "unless . . . 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 that follow, we institute an *inter partes* review as to all the challenged claims of the '537 patent based on all the grounds presented.

II. BACKGROUND

A. Related Proceedings

The parties identify several related federal district court cases, including *Scramoge Technology Ltd. v. Apple Inc.*, Case No. 6-21-cv-01071-ADA (W.D. Tex.). Pet. 81; Paper 5, 3–4 (Patent Owner's Mandatory

Notices). The parties also identify several related *inter partes* review proceedings. Pet. 81; Paper 5, 2–3.

B. The '537 Patent

The '537 patent describes "inductively supplying electrical power." Ex. 1001, 1:6–8. To illustrate, Figure 1 of the '537 patent is reproduced below.

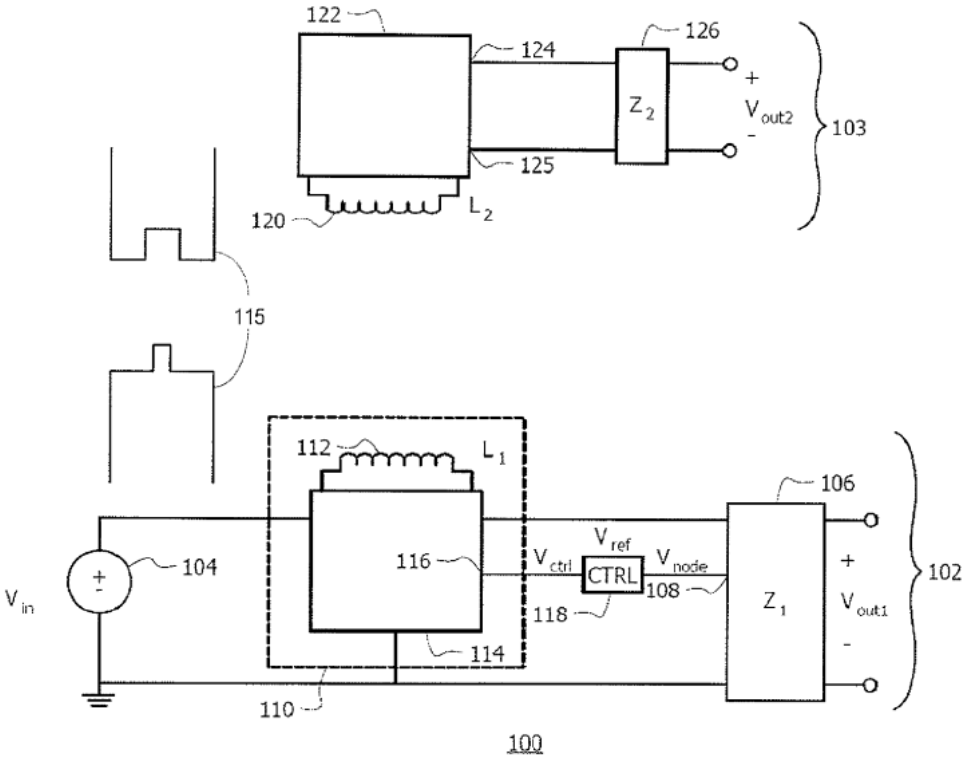

FIG. 1

Figure 1 shows inductive DC-DC converter circuit 100, which includes base unit 102 and target unit 103. *Id.* at 2:53–54, 3:22–27.

Base unit 102 includes DC voltage supply 104, which provides input DC voltage Vin. Ex. 1001, 3:31–33. Base unit 102 also includes load 106, which includes internal node 108. *Id.* at 3:33–34. DC voltage supply 104 and load 106 are electrically coupled through converter sub-circuit 110. *Id.*

at 3:39–40. Converter sub-circuit 110 includes first inductive element 112 and switching network 114, which directs current to or from inductive element 112 at an operating frequency. *Id.* at 3:41–44. Switching network 114 includes input node 116, which receives voltage signal Vctrl. *Id.* at 3:45–48. Internal node 108 and input node 116 are electrically coupled through controller element (CTRL) 118, which monitors voltage Vnode at node 108, comparing it to voltage Vref, and adjusts voltage Vctrl at node 116 based on such comparison. *Id.* at 3:48–53.

Target unit 103 includes second inductive element 120, rectifying element 122, and load 126. Ex. 1001, 3:61–4:6. Second inductive element 120 is electrically coupled to rectifying element 122. *Id.* at 3:61–66. Target unit 103 may be electrically coupled to an electronic device (e.g., battery, display unit, keypad) to provide power. *Id.* at 3:27–31.

In operation, first inductive element 112 serves as a primary coil for transferring power to target unit 103 via second inductive element 120, which serves as a secondary coil. Ex. 1001, 3:59–64. Second inductive element 120 generates a time-varying signal in response to coupling with first inductive element 112. *Id.* at 4:1–3. Rectifying element 122 generates a DC voltage signal between its node 124 and its node 125 for the time-varying signal generated by second inductive element 120. *Id.* at 3:65–4:3. The DC voltage can then be applied across second load 126 to produce output DC voltage Vout2. *Id.* at 4:3–6.

The ’537 patent explains that to enhance power transfer efficiency, switching network 114 is used to adjust the operating frequency of first inductive element 112 until the oscillation of second inductive element 120 is induced at the self-resonant frequency. Ex. 1001, 4:20–42. The operating

frequency of first inductive element 112 for inducing the self-resonant oscillation in second inductive element 120 can vary depending on the separation between the two inductive elements as well as the configuration of rectifying element 122 and second load 126. *Id.* at 4:42–50.

C. Illustrative Claim

Petitioner challenges claims 1–22 and 28 of the '537 patent. Claims 1, 12, and 28 are independent. Claim 1 is illustrative of the claims challenged:

> 1. A method for inductively transferring power from a base unit providing input power, to a target unit providing output power, where the base unit and the target unit are electrically isolated, comprising:
>
> positioning a second inductive element of said target unit within a predetermined distance of a first inductive element of said base unit;
>
> applying a time varying electric current to said first inductive element to produce a time varying magnetic field, said time varying magnetic field induces an electric current in said second inductive element;
>
> monitoring at least one parameter indicative of an efficiency of power transfer from said base unit to said target unit;
>
> automatically adjusting at least one characteristic of said time varying electric current responsive to said parameter to maximize an efficiency of power transfer from said base unit to said target unit.

Ex. 1001, 9:64–10:14.

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