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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

REACTIVE SURFACES LTD., LLP,
Petitioner,

v.

TOYOTA MOTOR CORPORATION,
Patent Owner.

Case IPR2016-01914
Patent 8,394,618 B2

Before CHRISTOPHER M. KAISER, JEFFREY W. ABRAHAM, and MICHELLE N. ANKENBRAND, *Administrative Patent Judges.*

KAISER, *Administrative Patent Judge*.

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

INTRODUCTION

A. Background

Reactive Surfaces Ltd., LLP ("Petitioner") filed a Petition (Paper 1, "Pet.") requesting an *inter partes* review of claims 1–11 of U.S. Patent No. 8,394,618 B2 (Ex. 1001, "the '618 patent"). On March 23, 2017, we instituted trial to review the patentability of claims 1–11. Paper 26 ("Inst. Dec.").

On March 3, 2017, Toyota Motor Corporation and the Regents of the University of Minnesota, the joint owners of the '618 patent, filed a motion to dismiss this proceeding on the ground of sovereign immunity under the Eleventh Amendment to the United States Constitution. Paper 23. Following a Response to the Motion to Dismiss by Petitioner (Paper 25) and a Reply (Paper 28), we granted the motion to dismiss in part, dismissing the Regents of the University of Minnesota from the proceeding, but continuing to review the patentability of the claims of the '618 patent with Toyota Motor Corporation present as Patent Owner. Paper 36.

After our decision on the Motion to Dismiss, Patent Owner filed a Response (Paper 37, "PO Resp."), Petitioner filed a Reply (Paper 41), and Patent Owner filed a Sur-Reply (Paper 56). Patent Owner filed Observations on Cross-Examination (Paper 54), to which Petitioner filed a Response (Paper 57). We held an oral hearing on January 9, 2018. Paper 63 ("Tr."). After the oral hearing, we authorized both parties to file additional briefing regarding the proper application of the Board's precedential decision in *Ex parte Schulhauser* to the challenged claims. Paper 60. Petitioner and Patent Owner each filed an additional brief on this issue. Paper 61; Paper 62.

We have jurisdiction under 35 U.S.C. § 6, and we issue this Final Written Decision pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. We conclude that Petitioner has established by a preponderance of the evidence that claims 1–11 of the '618 patent are unpatentable.

B. Related Matters

The parties have not identified any judicial or administrative matters that involve the '618 patent or that are otherwise related to this case.[1] Pet. 1; Paper 4, 1.

C. The Instituted Grounds of Unpatentability

We instituted review of claims 1–11 of the '618 patent based on the following grounds:

Statutory Ground	Basis	Challenged Claim(s)
§ 103	Van Antwerp[2]	1–3
§ 103	Van Antwerp and Bostek[3]	4 and 5
§ 103	Van Antwerp and Moon[4]	6–9

[1] The parties note that the '618 patent was the subject of *Reactive Surfaces Ltd. LLP v. Toyota Motor Engineering & Manufacturing North America, Inc.*, Case No. 1-13-CV-1098-LY (W.D. Tex.), and *Reactive Surfaces Ltd. LLP v. Toyota Motor Corporation*, Case No. 1:14-CV-1009-LY (W.D. Tex.), both of which have been dismissed without prejudice. Pet. 1–2; Paper 4, 1.

[2] Van Antwerp, U.S. Patent No. 5,868,720, issued Feb. 9, 1999 (Ex. 1005, "Van Antwerp").

[3] C. Carl Bostek, *Effective Methods of In-Line Intravenous Fluid Warming at Low to Moderate Infusion Rates*, 60 J. AM. ASS'N NURSE ANESTHETISTS 561, 561–66 (Dec. 1992) (Ex. 1009, "Bostek").

[4] Moon et al., US 2005/0176905 A1, published Aug. 11, 2005 (Ex. 1006, "Moon").

Statutory Ground	Basis	Challenged Claim(s)
§ 103	Van Antwerp and Hamade[5]	10 and 11
§ 103	Schneider[6]	1–8, 10, and 11
§ 103	Schneider and McDaniel[7]	9
§ 103	Drevon[8]	1–9
§ 103	Drevon and Schneider	10 and 11

D. The '618 Patent

The '618 patent is directed to a "substrate or coating . . . that includes a lipase with enzymatic activity toward a component of a fingerprint" and "a process for facilitating the removal of fingerprints . . . wherein an inventive substrate or coating including a lipase is capable of enzymatically degrading . . . one or more components of the fingerprint to facilitate fingerprint removal from the substrate or said coating." Ex. 1001, at [57]. "Fingerprint" is defined in the '618 patent as "a bioorganic stain, mark, or residue left behind after an organism touches a substrate or coating," and it "is not limited to marks or residue left behind after a substrate is touched by a finger." *Id.* at 3:1–4. "Other sources of bioorganic stains are illustratively, palms, toes, feet, face, any other skin surface area, hair, stains from fats used in cooking such as cis-fatty acids, or fatty acids from any other source." *Id.* at 3:4–8.

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[5] Hamade et al., U.S. Patent No. 6,150,146, issued Nov. 21, 2000 (Ex. 1007, "Hamade").

[6] Schneider et al., US 2005/0147579 A1, published July 7, 2005 (Ex. 1004, "Schneider").

[7] McDaniel, US 2004/0109853 A1, published June 10, 2004 (Ex. 1008, "McDaniel").

[8] Géraldine F. Drevon, Enzyme Immobilization into Polymers and Coatings (Ph.D. Thesis, University of Pittsburgh, Nov. 2002) (Ex. 1003, "Drevon").

E. Illustrative Claim

Petitioner challenges all the claims of the '618 patent. Claim 1 is independent and illustrative; it recites:

> 1. A method of facilitating the removal of a fingerprint on a substrate or a coating comprising:
>
> providing a substrate or a coating;
>
> associating a lipase with said substrate or said coating such that said lipase is capable of enzymatically degrading a component of a fingerprint, and
>
> facilitating the removal of a fingerprint by vaporization from the lipase associated substrate or coating when contacted by a fingerprint.

Id. at 15:18–27.

ANALYSIS

A. Claim Construction

In an *inter partes* review, we construe claim terms in an unexpired patent according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see Cuozzo Speed Techs. LLC v. Lee*, 136 S. Ct. 2131, 2144 (2016) (upholding the use of the broadest reasonable interpretation standard). Claim terms generally are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Petitioner proposes constructions for four terms: "fingerprint," "latent fingerprint," "vaporization," and "facilitating the removal of a fingerprint by vaporization." Pet. 16–17, 22; Reply 2–3. Patent Owner does not propose construing any terms, but it does agree with the interpretation of

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