

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

BEDRA, INC., BERKENHOFF GMBH,  
and POWERWAY GROUP CO. LTD.,  
Petitioner,

v.

SEONG, KI CHUL,  
Patent Owner.

---

Case IPR2018-00666  
Patent 6,306,523 B1

---

Before JO-ANNE M. KOKOSKI, KRISTINA M. KALAN, and  
CHRISTOPHER M. KAISER, *Administrative Patent Judges*.

KALAN, *Administrative Patent Judge*.

DECISION  
Denying Institution of *Inter Partes* Review  
35 U.S.C. § 314

## I. INTRODUCTION

Berkenhoff GmbH, Bedra, Inc., and Powerway Group Co., Ltd. (collectively, “Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–18 of U.S. Patent No. 6,306,523 B1 (Ex. 1001, “the ’523 patent”). Paper 2 (“Pet.”). Seong, Ki Chul<sup>1</sup> (“Patent Owner”) filed a Preliminary Response to the Petition. Paper 7 (“Prelim. Resp.”).

We have jurisdiction under 35 U.S.C. § 314, which provides that 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.” After considering the Petition, the Preliminary Response, and the evidence currently of record, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition. Accordingly, we do not institute an *inter partes* review.

### A. *Related Proceedings*

The parties represent that the ’523 patent is involved in *Ki Chul Seong v. BEDRA, Inc.*, Case No. 1:18-cv-00396 (N.D. Ill.). Pet. 8; Paper 4, 3. In addition, the ’523 patent previously was challenged by a different petitioner in IPR2016-00763. Pet. 1–4.

### B. *The ’523 Patent*

The ’523 patent, titled “Method of Manufacturing Porous Electrode Wire for Electric Discharge Machining and Structure of the Electrode Wire,” issued on October 23, 2001, and claims priority, ultimately, to a Korean application filed July 30, 1997. Ex. 1001, at [54], [45], [30]. The ’523

---

<sup>1</sup> Various spelled “Sung, Ki Chul” and “Ki Chul Song.” Prelim. Resp. 1; Paper 4, 3.

patent “relates to a porous electrode wire for use in electrical discharge machining and the method of manufacturing the same.” *Id.* at [57]. The patent describes electrical discharge machining of a work piece as “melting the work piece during the arc discharge” created by applying a “high frequency voltage” between an “electrode wire” and a “start hole” in the work piece, along with “removing the machining particles using a machining liquid and an instantaneous vaporization power between the wire and the work piece.” *Id.* at 1:20–33.

The invention of the '523 patent is described as having the purposes of improving machining speed “by increasing the surface area of the wire which will be in contact with cooling liquid” and “by allowing the contact of the cooling liquid not only with the surface of the wire but also with inner part of the wire,” and providing a coated wire “with improved flushability without decreasing the machining accuracy.” *Id.* at 3:23–39. The patent describes achieving these purposes by “hot dip galvanizing” a wire made of a first metal by “passing the wire . . . through a molten [bath] of a second metal . . . thereby forming an alloy layer by the diffusion reaction between the first metal and the second metal . . . and a coating layer made of the second metal.” *Id.* at 3:39–49. The patent also describes drawing this wire to a new diameter, “thereby forming cracks in the alloy layer and the coating layer.” *Id.* at 3:51–53. The first metal “may use copper or brass having 63–67 wt % copper and 33–37 wt % zinc.” *Id.* at 3:54–55. The second metal “may use zinc, aluminum or tin.” *Id.* at 3:55–56.

*C. Challenged Claims*

Claim 1 recites:

1. A method of manufacturing a coated electrode wire for use in electrical discharge machining comprising:

providing an intermediate wire having a first diameter and made of a first metal including copper;  
hot dip galvanizing the intermediate wire through a molten bath of a second metal having vaporization temperature lower than the first metal for a desired time and temperature, wherein an alloy layer is formed on the intermediate wire by diffusion reaction of the first metal and the second metal, having hardness higher and lower elongation than the first metal and second metal, and wherein a coating layer is formed on the alloy layer; and  
drawing the intermediate wire having the alloy layer and the coating layer to form a coated electrode wire having a second diameter, wherein cracks are formed during the drawing step in the alloy layer and the coating layer due to the high hardness and low elongation.

Ex. 1001, 7:6–23. Claims 2–13 depend directly or indirectly from claim 1. Independent claim 14 is drawn to an electrode wire; claims 15–18 depend directly or indirectly from claim 14.

*D. The Asserted Grounds of Unpatentability*

Petitioner challenges claims 1–18 of the '523 patent on three grounds (Pet. 32):

References	Basis	Claim(s) Challenged
Tomalin <sup>2</sup> and Tominaga <sup>3</sup>	§ 103(a)	1 and 3–18
Tomalin, Tominaga, and Mukherjee <sup>4</sup>	§ 103(a)	2
Mukherjee and Briffod I <sup>5</sup>	§ 103(a)	1–18

<sup>2</sup> U.S. Patent No. 5,945,010, issued Aug. 31, 1999 (Ex. 1009, “Tomalin”).

<sup>3</sup> U.S. Patent No. 4,686,153, issued Aug. 11, 1987 (Ex. 1014, “Tominaga”).

<sup>4</sup> U.S. Patent No. 5,808,262, issued Sept. 15, 1998 (Ex. 1005, “Mukherjee”).

<sup>5</sup> U.S. Patent No. 5,196,665, issued Mar. 23, 1993 (Ex. 1015, “Briffod I”).

Petitioner relies on a declaration from Dr. Dandridge Tomalin.  
Ex. 1004. Patent Owner relies on a declaration from Dr. Sya Ensha, Ph.D.  
Ex. 2009.

## II. ANALYSIS

### A. *Claim Construction*

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable constructions in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). Under the broadest reasonable construction standard, claim terms are presumed to have 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). Only terms which are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’”)).

The only claim term whose meaning is in dispute is the term “cracks” that appears in independent claims 1 and 14. Pet. 33–34; Prelim. Resp. 10–12. Patent Owner argues that this phrase should be given its dictionary definition, “narrow breaks.” Prelim. Resp. 11–12. Petitioner argues that “[t]he ’523 patent does not limit the description of ‘cracks’ to any specific structure or configuration,” so it would be inappropriate to interpret “cracks”

# 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.