

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

VARIAN MEDICAL SYSTEMS, INC.,  
Petitioner,

v.

WILLIAM BEAUMONT HOSPITAL,  
Patent Owner.

---

Case IPR2016-00171  
Patent 7,471,765 B2

---

Before MICHAEL W. KIM, KALYAN K. DESHPANDE, and  
MATTHEW R. CLEMENTS, *Administrative Patent Judges*.

DESHPANDE, *Administrative Patent Judge*.

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

## I. INTRODUCTION

### A. Background

Varian Medical Systems, Inc. (“Petitioner”) filed a Petition to institute an *inter partes* review of claims 14–19 of U.S. Patent No. 7,471,765 B2 (Ex. 1201, “the ’765 patent”). Paper 1 (“Pet.”). William Beaumont Hospital (“Patent Owner”) filed a Preliminary Response. Paper 11 (“Prelim. Resp.”).

Pursuant to 35 U.S.C. § 314, we instituted *inter partes* review of the ’765 patent, on May 5, 2016, under 35 U.S.C. § 103(a), as to claims 14–16 on the basis that these claims would have been obvious over Jaffray 1999 SPIE,<sup>1</sup> Jaffray 1999 JRO,<sup>2</sup> Adler,<sup>3</sup> and Depp;<sup>4</sup> as to claims 17–19 on the basis that these claims would have been obvious over Jaffray 1999 SPIE, Jaffray 1999 JRO, Adler, Depp, and Yan;<sup>5</sup> as to claims 14–16 on the basis

---

<sup>1</sup> D.A. Jaffray *et al.*, *Performance of a Volumetric CT Scanner Based Upon a Flat-Panel Imager*, SPIE, 3659:204–14 (Feb. 1999) (Ex. 1205, “Jaffray 1999 SPIE”).

<sup>2</sup> David A. Jaffray *et al.*, *A Radiographic and Tomographic Imaging System Integrated into a Medical Linear Accelerator for Localization of Bone and Soft-Tissue Targets*, *Int. J. Radiation Oncology Biol. Phys.*, 45:773–89 (Oct. 1999) (Ex. 1206, “Jaffray 1999 JRO”).

<sup>3</sup> U.S. Patent No. 5,207,223, issued May 4, 1993 (Ex. 1203).

<sup>4</sup> U.S. Patent No. 5,427,097, issued June 27, 1995 (Ex. 1204).

<sup>5</sup> D. Yan *et al.*, *The Use of Adaptive Radiation Therapy to Reduce Setup Error: A Prospective Clinical Study*, *Int’l J. Radiation Oncology Biol. Phys.*, 41:715–20 (1998) (Ex. 1210) (“Yan”).

that these claims would have been obvious over Cho,<sup>6</sup> Antonuk,<sup>7</sup> Jaffray 1997,<sup>8</sup> Adler, and Depp; and as to claims 17–19 on the basis that these claims would have been obvious over Cho, Antonuk, Jaffray 1997, Adler, Depp, and Yan. Paper 14 (“Dec.”).

Patent Owner filed a Response (Paper 26, “PO Resp.”), and Petitioner filed a Reply (Paper 52, “Pet. Reply”). A consolidated oral hearing was held on January 31, 2017, and the hearing transcript has been entered in the record. Paper 77, (“Tr. 1”); Paper 78 (“Tr. 2”). Patent Owner also filed a Motion to Exclude (Paper 60, “PO Mot.”), to which Petitioner filed an Opposition (Paper 66, “Pet. Opp.”) and Patent Owner filed a Reply (Paper 70, “PO Reply”).

After the oral hearing, we authorized additional briefing on the proper claim construction of the phrase “wherein said computer receives said image of said object and based on said image sends a signal to said radiation source that controls said path of said radiation source,” as recited by independent claim 1 of the ’502 patent, and as similarly recited by independent claims 14 and 17. Paper 76. Patent Owner filed a Response (Paper 79) and Petitioner filed a Response (Paper 80).

---

<sup>6</sup> P.S. Cho et al., *Cone-beam CT for radiotherapy applications*, Phys. Med. Biol., 40:1863-83 (1995) (Ex. 1207, “Cho”).

<sup>7</sup> L.E. Antonuk et al., *Thin-Film, Flat-Panel, Composite Imagers for Projection and Tomographic Imaging*, IEEE Transactions on Medical Imaging, 13:482-90 (1994) (Ex. 1208, “Antonuk”).

<sup>8</sup> D.A. Jaffray et al., *Exploring “Target Of The Day” Strategies for A Medical Linear Accelerator With Conebeam-CT Scanning Capability*, Proceedings of the 12th International Conference on the Use of Computers in Radiation Therapy, Medical Physics Publishing, pp. 172-75 (1997) (Ex. 1209, “Jaffray 1997”).

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 not shown by a preponderance of the evidence that claims 14–19 of the ’765 patent are unpatentable under 35 U.S.C. § 103(a).

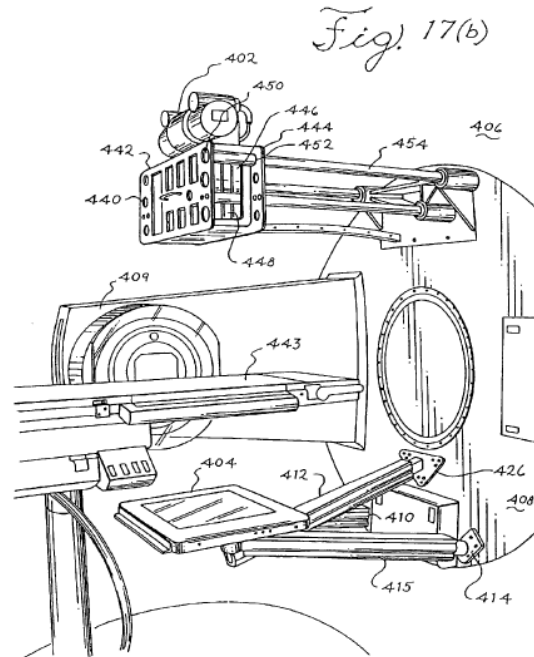
*B. Related Proceedings*

The parties indicate that the ’765 patent is involved in the following district court case: *Elekta Ltd. and William Beaumont Hosp. v. Varian Med. Sys., Inc.*, Case No. 2:15-cv-12169-AC-MKM (E.D. Mich.). Pet. 1; Paper 4, 2. Petitioner and Patent Owner identify further the following *inter partes* reviews that also involve the ’765 patent: IPR2016-00169 and IPR2016-00170. Pet. 1; Paper 4, 2. Patent Owner identifies further the following *inter partes* reviews directed to U.S. Patent 6,842,502 B2 (“the ’502 patent”), which the ’765 patent claims priority to: IPR2016-00160, IPR2016-00162, IPR2016-00163, and IPR2016-00166. Paper 4, 2. Patent Owner identifies further the following *inter partes* reviews directed to U.S. Patent 7,826,592 B2, which claims priority to the ’765 patent: IPR2016-00187. *Id.*

*C. The ’765 Patent*

The ’765 patent discloses that it is directed to a cone-beam computed tomography system that employs an amorphous silicon flat-panel imager for use in radiotherapy applications where images of a patient are acquired with the patient in a treatment position on a treatment table. Ex. 1201, 1:16–21. Figure 17(b) (below) depicts a diagrammatic view of one orientation of an

exemplary wall-mounted cone beam computerized tomography system employing a flat-panel imager. *Id.* at 6:48–52.



Specifically, Figure 17(b) above shows wall-mounted cone beam computerized tomography system 400 including an x-ray source, such as x-ray tube 402, and flat-panel imager 404 mounted on gantry 406. *Id.* at 19:41–43. X-ray tube 402 generates beam of x-rays 407 in a form of a cone or pyramid. *Id.* at 19:43–56. Flat-panel imager 404 employs amorphous silicon detectors. *Id.* at 19:46–47.

#### *D. Illustrative Claim*

Petitioner challenges claims 14–19 of the '765 patent. Pet. 19–60. Claims 14 and 17 are the only independent claims at issue, and are reproduced below:

14. A method of treating an object with radiation, comprising:
  - positioning said object on a support table;
  - generating three-dimensional information concerning said object by:

# 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.