

Albert M. Juergens

Principal Engineer & Expert Witness in Patent Consulting | Medical Device Innovation

Professional Summary

Over 35 years of interdisciplinary engineering excellence—mechanical, optical, electronic, software—focused on patent prosecution, infringement analysis, medical device R&D, and high-stakes expert witness testimony. Proven track record of bringing Class II devices to market, leading multi-site R&D teams, and driving cost-effective manufacturing under ISO, FDA, and IEC standards.

Areas of Expertise

- Patent Infringement Analysis & Claim Construction
- Medical Device Design, Prototyping & FDA Regulatory Support
- Product Tear-Down, Competitive Evaluation & Technical Review
- Expert Witness Testimony: Depositions, Hearings & Trial Support
- Patent Portfolio Evaluation, Licensing Strategy & M&A Due Diligence
- Standards & Compliance: IEC 60601, 62304, 62366; FDA 21 CFR 820; ISO 10993; MDD 93/42/EEC; 510(k)
- Cross-Functional Team Leadership & Global Supplier Collaboration

Employment History

Principal | OST Corporation

Mar 2010 – Present

Engineering & patent consulting practice. Expertise in medical product design/development, patent prosecution, infringement analysis, tear-down & evaluation, technical review, claim construction, and portfolio management.

Chief Technology Officer | American Optics

Oct 2017 – Oct 2018

Led engineering & quality for rigid/flexible endoscope optical/mechanical components. Introduced advanced metrology and manufacturing processes to tighten tolerances, lower costs, and ensure IEC 13485:2016 compliance.

Chief Technology Officer | MicroGroup

Oct 2008 – Feb 2010

Oversaw manufacturing technology for a \\$48 M medical-device component maker. Managed 8 direct reports across two sites. Deployed CAM software for CNC programming, enhanced needle grinding, and upgraded cleaning equipment.

Vice President, R&D | Gyrus ACMI (Olympus)

Nov 2004 – Oct 2008

Directed 40 + person R&D across three locations with an \\$8 M budget. Launched 15 + products/upgrades—endoscopes, cameras, lasers—prioritizing manufacturability and cost control. Leadership team member during Gyrus acquisition.

Principal Engineer | Brattas Corporation

Jul 1981 – Nov 2004

Independent multi-discipline consultant: mechanical, electronic, optical, software systems product development. (See detailed project portfolio below.)

Optical Test Engineer | Pratt & Whitney Aircraft

Jun 1979 – Jun 1981

Designed, installed & operated optical test instrumentation to evaluate jet engine performance.

Key Achievements & Highlights

- 35+ years developing & launching engineering-intensive products (hardware, software, mechanical, optical), including multiple Class II medical devices
- Led multi-site R&D teams of 40+ staff with budgets over \\$8 M
- Brought these flagship products to market:
 - MR-6A – Autoclavable semi-rigid ureteroscope

- DURD – First flexible digital ureteroscope
- Invisio – Megapixel snap-on CMOS camera head
- Titan – Autoclavable megapixel CMOS head
- UroPass – Urological access sheath
- Sure-Catch – No-tip nitinol kidney-stone basket
- OM5 – Urodynamics system
- CyberWand – Ultrasonic lithotripsy system
- DUR-HL20 – Holmium laser
- Pelleve S5 – 120 W electrosurgical generator
- Cheveux – 500 W diode laser
- Medley – Multi-modal laser (Erbium, diode, Nd:YAG, IPL)
- Ruby – Ruby laser
- Pelleve & Pellefirm – Wrinkle reduction systems
- Expert in:
 - Building cross-functional global teams
 - Managing foreign (Asian, European, Israeli) suppliers & co-developers
 - Patent prosecution & defense; M&A due diligence
 - Medical device standards & regulations (IEC-60601, CFR 820, IEC-62304/62366, ISO-10993, MDD 93/42/EEC)

Medical Product Experience

Aesthetic & Surgical Lasers

- CO₂, Erbium YAG, diode & ruby lasers for skin resurfacing & hair removal
(Ellman International; New York – 2010–2015)
- Holmium & green-light lasers for kidney-stone management & prostate ablation
(Gyrus ACMI – 2004–2006)

Artificial Heart Pump Controller

- Pneumatic & electronic hardware/firmware/software design for proof-of-concept artificial heart controller, including power/battery management
(Medical Equipment Manufacturer; MA – 1998)

Audio Systems for OR & CPAP Patients

- Dynamic throat microphone & pocket amplifier design for BiPAP/CPAP users
(Medical Equipment Manufacturer; MA – 2016 & 2017)
- Bluetooth OR communications system: DSP board design & international programming oversight
(Medical Equipment Manufacturer; CA – 2001)

Blood Purification Processing Equipment

- Digital pneumatic control hardware/software for donor blood processing prototype
(Medical Equipment Design Co.; NH – 2001)

Digital Flexible Ureteroscope & Endoscopic Cameras

- Tear-down & patent evaluation: flexible ureteroscope internals
(Law Firm; CT – 2019)
- Expert technical review of three-chip camera design (schematics/firmware)
(Law Firm; CT – 2014–2019)
- OEM miniature video camera development: optics & software-controlled illumination
(Startup; MA & CA – 2010)
- Development of first flexible ureteroscope with custom CMOS distal sensor
(Gyrus ACMI – 2005)

- CMOS capability assessment & patent portfolio due diligence
(Medical Equipment Manufacturer; MA & Israel – 2004)
- Custom shutter algorithm & Ultem enclosure redesign for 3-chip camera
(Medical Equipment Manufacturer; CA – 1999–2000)

Electrosurgical Generators

- 150 W multi-processor ESU design for Chinese surgical market
(Medical Device Manufacturer; Beijing – 2016 & 2017)
- 50 W ESU redesign & EMI mitigation for US aesthetic market
(Ellman International; NY – 2010–2015)

Heads-Up Display for Surgeons

- Infrared video transmitter & power supply design for OR HUD
(Medical Equipment Manufacturer; CA – 2001)

Inter-Uterine Fluid Management System

- Digital & analog hardware/firmware, hydraulic pressure control, FDA 510(k) submissions
(Medical Equipment Manufacturer; CA – 1996–1997)

Optical Systems

- MR-6A autoclavable semi-rigid ureteroscope release & fused-fiber optical design
(Gyrus ACMI – 2004–2006)
- Technical competence audit of endoscope repair & lens manufacturing facilities
(Venture Capital Fund; MA – 2017)
- Rigid endoscope internals assessment for infringement evaluation
(Law Firm; CT – 2019)

Patents & Applications

- US 10,492,849 – Surgical instruments & systems with multimodes of treatment and electrosurgical operation (Cynosure, Inc.)

- US 10,143,831 – Electrosurgical systems & methods (Cynosure, Inc.)
- US 8,233,075 – User-aided auto-focus (Gyrus Group PLC)
- US 7,313,246 – Information system using eyewear for communication (Optimize, Inc. → Stryker Corp.)
- US 6,729,726 – Eyewear for hands-free communication (Stryker Corp.)
- US 6,032,843 – Longitudinal transport of laterally curved resilient strip
- US 5,497,060 – Positioning stage
- US Patent App. 20140276801 – Electrosurgical systems & methods
- US Patent App. 20140276768 – Electrosurgical systems
- US Patent App. 20140276659 – Surgical instruments & systems with multimodes of treatment (Ellman Int'l)
- US Patent App. 20130006239 – Electrosurgical systems & methods (Ellman Int'l)
- US Patent App. 20090046196 – User-aided autofocus (Gyrus Group PLC)
- US Patent App. 20030068057 – Information system using eyewear (Optimize, Inc. → Stryker Corp.)
- US Patent App. 20030067585 – Eyewear for two-way communication (Optimize, Inc. → Stryker Corp.)

Education

B.S. in Physics, Fairfield University, Fairfield, CT — 1979

Personal & Languages

- Fluent in German
- Extensive travel in the US, Europe & Asia
- Past member, New Fairfield (CT) Board of Education
- Hobbies: metal fabrication (welding, machining) & woodworking

Selected Expert Witness Engagements

- 3:14-cv-00876 — Karl Storz Endoscopy v. Stryker Corp. et al.

- 2:12-cv-02716-KOB — Karl Storz Endoscopy v. Integrated Medical Systems Int'l
- IPR2020-00152 — Intuitive Surgical, Inc. v. Rex Medical, L.P. (Inter Partes Review)
- 19-cv-00005-MN — Rex Medical, L.P. v. Intuitive Surgical, Inc.

Contact Information

Phone: 203-770-3503

Email: aj@ostexpert.com

Address: 530 Red Rock Road, Cresco, PA 18326, USA