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## **Curriculum Vitae**

### **DAVID G. SMITH, MSME, MBA, PE, CSP**

#### **MECHANICAL ENGINEERING EXPERT**

David G. Smith is a Mechanical Engineer, a registered Professional Engineer and a Certified Safety Professional. As the Vice President of Alpine Engineering and Design, Inc. he specializes in new product development, product design, patents, safety, and expert witness work.

#### **EDUCATION**

- MBA, Brigham Young University, Emphasis in Product Development (2011)
- Masters of Science, Mechanical Engineering, Brigham Young University (2011)
  - Thesis: Off-axis Stiffness and Piezoresistive Sensing in Large-displacement Linear-motion MEMS
  - Areas of study: Compliant Mechanisms, Springs, Structural Analysis, MEMS, Stress and Deflection analysis, FEA, Machine Design, Product Development
- Bachelors of Science, Brigham Young University - Idaho, Mechanical Engineering
  - Cum Laude Graduate

#### **REGISTRATIONS AND CERTIFICATIONS**

- Professional Mechanical Engineer (PE), Utah license # 8645497-2202
- Certified Safety Professional in Comprehensive Practice (CSP), License # CSP-30707
- Certified Forklift Operator
- Certified Counterbalanced Forklift Operator Trainer
- Certified Rough Terrain Telehandler Operator Trainer
- Certified Aerial Boom Lift Operator Trainer
- Certified Aerial Work Platform (scissor lift) Operator Trainer
- Certified Mobile Crane and Rigging Inspector

## **AREAS OF CONSULTING FOCUS**

During his years as a consultant, Mr. Smith has been involved in hundreds of consulting projects. His major areas of focus and expertise include: thrill rides, aerial lifts, trailers, towing systems, tarping systems, refuse trucks, exercise equipment, forklifts and telehandlers, drilling equipment, oil and gas equipment, cranes, scaffolding, heavy equipment, hydraulic equipment, plastic design, structural analysis, designing to standards, and safety.

## **EXPERT WITNESS**

Mr. Smith has been retained as an expert on over 25 patent, product liability, and personal injury cases and has testified in a number of these. He has worked as a senior associate on an additional 45+ patent cases and an additional 75+ product liability/personal injury cases. Mr. Smith has attended SEAK expert witness training and has experience and competency in the following areas:

Patent Invalidity/Non-infringement  
Patent Infringement/Validity  
Prior Art Searching  
Claim Construction

Product Liability  
Personal Injury  
Accident Reconstruction  
Safety

## **PATENTS**

During his time at Alpine Engineering and Design, Inc., Mr. Smith has become familiar with patent prosecution and patent litigation. He has written several provisional patent applications, and has worked with attorneys in writing the specifications, creating drawings and drafting claims for utility patents on products he has helped design. As part of the product development process, he has performed patent searches, both for informational purposes and to lessen the likelihood that new developments would infringe other's intellectual property. Mr. Smith has four issued patents with multiple patents pending.

- 9,387,788 - Combination Trailer
- 9,616,799 - Pneumatic Tank Trailer
- 9,789,916 - Pneumatic Tank Trailer
- 10,206,495 - Vehicle Receiver Hitch-Supported Cargo Rack Transformable into a Picnic Table with Benches

As an expert, Mr. Smith has also been involved in patent litigation in the areas of claim construction, prior art and patent searches, infringement/non-invalidity analyses and non-infringement/invalidity analyses on over 45 cases. The following are a few of the categories of patent issues Mr. Smith has consulted on:

Semi Trailers  
Mobile Equipment  
Vehicle Mounted Equipment  
Agricultural Equipment  
Trailer Tarping Systems  
Oil/Gas Drilling Equipment  
Weight Machines  
Athletic equipment

Plastic Components  
Office Supplies  
Food Processors  
Blenders  
Coffee and Tea makers  
Camera Mounts  
Hospital Equipment  
Marching Band Equipment

Hinges  
Seating  
Hand Tools  
Springs  
Car seat gap fillers  
Light Fixtures and Connectors  
Baby bottle warmers  
Cooler Latching Systems

## **PUBLICATIONS**

- Off-axis Stiffness and Piezoresistive Sensing in Large-displacement Linear-motion MEMS
- Piezoresistive Encoders for Ratcheting Actuation Systems
- Design Optimization of a Linear-motion Large-displacement Micro Mechanism for High Off-axis Stiffness
- Metrics for Evaluation and Design of Large-displacement Linear-motion Compliant Mechanisms
- An Engineering Guide for Trailer Safety Chain Installation, Attachment and Use