

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SIMPSON STRONG-TIE COMPANY INC.
Petitioner

v.

COLUMBIA INSURANCE COMPANY
Patent Owner

Case PGR2024-00050
Patent No. 11,920,339

DECLARATION OF DWIGHT J. DUNCAN, CFA

I, Dwight J. Duncan, hereby declare as follows:

I. Qualifications

1. I am an economist and am the founder and Managing Director of EconLit LLC, an economic and litigation consulting firm based in Mesa, Arizona (“EconLit”).

2. I am over 18 years of age. I received my Bachelor of Science degree in Economics, summa cum laude, from Arizona State University in 1992. I received a Master of Science in Economics from Arizona State University in 1993. I obtained the Chartered Financial Analyst ("CFA") designation from the Institute of Chartered Financial Analysts and the Association for Investment Management and Research in September 1998. I have maintained the CFA designation from 1998 to present.

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3. From 1992 to 1994, I was employed by Orbital Sciences Corporation in Chandler, Arizona as a Special Consultant to the Chief Financial Officer. From 1992 to 1993, I also was a Faculty Associate/Teaching Assistant in the Department of Economics at Arizona State University in Tempe, Arizona. From 1994 to 2000, I was employed within the Financial Advisory Services group of PricewaterhouseCoopers, LLC, in its Phoenix, Arizona office, in the Dispute Analysis & Investigations Group/Economics and Statistics Practice. I ultimately obtained the position of Director in the firm's practice. From 2001 to 2004, I also served as an Adjunct Professor of Economics in the Arizona State University MBA program. From 2000 to the present, I have been the Managing Director of EconLit.

4. I have over 30 years of experience in economic and financial consulting. My areas of expertise include, but are not limited to, economic analysis, financial analysis, intellectual property analysis, securities litigation, valuation of closely-held businesses, environmental damage quantification, class certification/class action analysis, real estate damages, personal injury, wrongful death, wrongful termination, general lost profits analysis and minority shareholder disputes. I have consulted with and been engaged as an independent expert witness for companies ranging from sole proprietorships to Fortune 500 companies in a wide range of industries throughout the United States as well as internationally. Attached hereto as Exhibit A, and incorporated herein by this reference, is a copy of my resume and testimony experience over the prior four years.

5. I have provided expert testimony in various federal and state courts on numerous occasions over the last 25 years. My CV is attached as **Exhibit A**.

II. Introduction and Background¹

6. I have been asked to perform an analysis of the factors relating to the economic demand for the invention claimed in the ‘339 Patent.² I understand that the ‘339 Patent is owned by Columbia Insurance Co., but that MiTek Inc. (“MiTek”) is the exclusive licensee of the ‘339 Patent.

7. I understand that the ‘339 Patent relates to “an improvement in the ‘method of constructing a fire-resistive wall assembly’.”³ I further understand that the method claimed by the ‘339 Patent “recites a specific order of construction of the fire-resistive wall assembly with respect to the order the fire wall hanger (26) and the fire-retardant sheathing (34) are installed.”⁴

8. In general terms, I understand that the method claimed by the ‘339 Patent improves on the installation process of gypsum dry wall during the framing of multi-level residential construction projects, and that with the claimed invention, the framing of a building can be completed and made weather-tight prior to the installation of the gypsum wallboard. I further understand that this method is an improvement over prior construction methods, as prior construction methods required the installation of gypsum wallboard before the installation of hangers. This, for example, could have exposed the installed gypsum wallboard to inclement weather during the construction process.

9. I understand that MiTek’s FWH series of firewall hangers practice the invention claimed in the ‘339 Patent. For example, a MiTek Technical Bulletin regarding the “FWH Series

¹ The information contained in this section is based on information provided to me and EconLit and per discussions with Messrs. Michael Alley and Richard Kaczowski. This section is not intended to be an exact recitation of the facts, provide any legal determinations or conclusions, or expert opinions; it is included solely to provide an overview of relevant information and context for the work performed and opinions provided in this letter.

² I understand that MiTek claims certain Simpson products improperly incorporate key attributes detailed in the ‘339 Patent. For simplicity, I refer to this claim as the “invention claimed in the ‘339 Patent”.

³ Declaration of Richard T. Kaczowski, dated December 20, 2024 (“Kaczowski 2024 Declaration”), p. 11.

⁴ Kaczowski 2024 Declaration, p. 13.

Fire Wall Hangers” states that the product would be available in Spring 2014 and highlights the feature that the “advanced design allows you to **install the hangers before the drywall is attached**, allowing your project to be completely framed-up and weather-tight when the drywall sheathing shows up on site.”⁵

10. I further understand that in response to MiTek’s success with the FWH hangers, Simpson developed its own version of firewall hangers that practice the invention claimed in the ‘339 Patent.⁶ For example, a Simpson flyer from June 2018⁷ advertised the new Simpson DG firewall hanger as “**Easy to Install Before the Drywall**” on the cover page, and touted it as “the next generation” of Simpson’s firewall hangers that are “ideal for multi-family, multi-level building construction”.⁸ After Simpson withdrew its DG firewall hanger, Simpson then introduced its DGF series of firewall hangers. Simpson’s 2019-2020 product catalogue for “Wood Construction Connectors” describes Simpson’s DGF firewall hangers as follows: “The new DGF series of fire wall hangers easily install on a two-hour wood stud fire wall (e.g., Type III construction) during framing” allowing “for two layers of 5/8” gypsum board (drywall) to be slipped into place **after the framing is complete**.”⁹ I further understand that Simpson’s new DGT firewall hanger also practice the invention claimed in the ‘339 Patent.¹⁰

⁵ MiTEK00026090 (emphasis added).

⁶ Hensen Deposition, dated January 28, 2025 (“Hensen Deposition”), p. 46:5-10.

⁷ Hensen Deposition, p. 92:7-9.

⁸ CIP0000506-9 at 7-6 (Hensen Ex. 12) (emphasis added). I understand that Simpson started to sell the DG firewall hangers in June 2017 (report issued by Dr. Serwin on February 14, 2025 regarding certain claims of the ‘510 Patent (“Serwin February 2025 Report”), p. 14). I further understand that MiTek had accused Simpson of infringing United States Patent No. 10,184,242 (the “‘242 Patent”), and that the parties settled the infringement action resulting in Simpson to stop selling the DG hangers by the end of March 2019 (Settlement Agreement between Simson Strong-Tie Company, Inc and MiTek Holdings, Inc. and Columbia Insurance Company, p. 1 (Hensen Ex. 14) (MiTek00000387-394 at 387)).

⁹ SIMPSON003853-4192 at 3860 (Hensen Ex. 7) (emphasis added).

¹⁰ SST0049346-49.

III. SUMMARY OF ANALYSES AND CONCLUSIONS

11. Several methods exist to ascertain the features of a product that drive the economic demand for the analyzed product. Generally speaking, these methods can be categorized as either a *stated preference* analysis or a *revealed preference* analysis. For the matter at hand, I utilized analytical techniques from both methods. Based on my analyses and the totality of evidence reviewed in this matter (including survey results and declarations submitted by construction professions), the invention claimed in the ‘339 Patent represents a primary driver of the economic demand for products that incorporate the invention claimed in the ‘339 Patent.

IV. RELEVANT ECONOMIC THEORY

12. A theoretical overview of each of my analyses is discussed in the following two sections.

A. Economic Theory: Stated Preference Analysis

13. To determine the demand of a product (or a product attribute) economists can rely on stated preference analyses. The term, stated preference analysis, refers to a technique or method that relies on individuals’ statements regarding their preferences to estimate the demand of a product (or of a product’s attribute). Stated preference methods have been applied to a wide variety of consumer goods and public goods.¹¹

14. Stated preference methods are known by a variety of names, including: conjoint analysis, functional measurement, transfer price method, and contingent valuation, among others. These types of stated preference analyses are generally accepted methods commonly used in the field of economics to help measure the economic value of a product feature or attribute.

¹¹ For example, economists have valued consumer stated preferences in travel or transportation choices, organic and non-organic foods, as well as milk from cloned or conventionally bred cows.

15. The stated preference analyses can incorporate both qualitative and quantitative methods and data. Stated preference analyses typically rely on surveys of individuals regarding their preferences. The method of relying on surveys in stated preference analysis has been widely used since at least 1978.¹²

B. Economic Theory: Revealed Preference Analysis

16. A revealed preference analysis relies on the observable behavior of market participants. For example, when consumers purchase a house, the demand for certain attributes of the house is “revealed” (in combination with market supply) through the purchase price. The purchase price also reveals how consumers trade-off factors such as proximity to place of work with size of the house. The demand for all property attributes can then be observed through the purchase price paid. In other words, the value of the attributes (and in turn the demand for these attributes) is revealed through an observable measure (i.e., the sale price of the house). Other observable quantities are the number of units demanded and/or consumed. To ascertain whether one product feature is more desirable than another feature, the revenues (representing the demand) from one product with the feature in question can be compared to the revenues from another product without the feature in question.

17. Economists have also combined both revealed and stated preferences methods. For example, revealed and stated preference analyses were combined in estimating what consumers would be willing to pay for milk from a conventionally bred cow versus from a cloned cow, despite U.S. Food and Drug Administration’s announcement that there is no difference in cows’ milk.¹³

¹² Kroes, Eric P., and Robert J. Sheldon, “Stated Preference Methods: An Introduction,” *Journal of Transport Economics and Policy*, vol. 22, no. 1, 1988, pp. 11–25. www.jstor.org/stable/20052832.

¹³ Brooks, Kathleen, and Jayson L. Lusk, “Stated and Revealed Preferences for Organic and Cloned Milk: Combining Choice Experiment and Scanner Data,” *American Journal of Agricultural Economics*, vol. 92, no. 4, 2010, pp. 1229–1241. www.jstor.org/stable/40931077.

V. DISCUSSION OF ANALYSES AND FINDINGS

18. For my stated preference analysis, I reviewed the findings of a survey conducted by Mr. Michael Alley in May 2025 (“Alley Survey”), and combined the survey results with a review of statements made by Simpson employees regarding consumer demand for products that practiced the invention claimed in the ‘339 Patent and for products that did not practice said invention. I also reviewed statements made by several construction professionals that issued declarations in the instant matter regarding the technical aspects of the MiTek FWH hangers and several of Simpson’s firewall hangers.

19. For my revealed preference analysis, I analyzed actual sales data for firewall hangers that incorporate the invention claimed in the ‘339 Patent and compared the sales revenues of these products to the revenues of firewall hangers that do not incorporate the invention claimed in the ‘339 Patent. Such comparison allows for the confirmation of the demand identified in the stated preference analysis.

A. Application of Stated Preference Analysis to Invention Claimed in ‘339 Patent

20. Mr. Alley conducted a survey of construction professionals who are familiar with MiTek’s and Simpson’s firewall hangers that practice the invention claimed in the ‘339 Patent. As per the Alley Survey, the main findings are as follows:¹⁴

21. “In open-ended feedback, a majority of construction professionals cite the installation process as a reason for purchasing, requesting, or specifying the FWH or DGT products.”

22. “A majority of construction professionals indicate the website claims regarding the patented feature make them more likely to purchase, request, or specify the product.”

¹⁴ Alley Declaration, Key Findings Section, ¶¶ 22-26.

23. “A majority of construction professionals indicate that the ability to install these joist hangers prior to drywall installation was a primary factor in their purchase, request, or specification decision.”

24. “An (sic) majority of construction professionals indicate that they are willing to pay more for (or request/specify at a higher cost) joist hangers which can be installed prior to drywall installation.”

25. As per the Alley Survey, 79% of the survey respondents identified the installation of the FWH hanger before the drywall as making them more likely to purchase, request to purchase, or specify the FWH product. A similar result was true when survey respondents were asked about the Simpson DGT firewall hangers.¹⁵ As per the Alley Survey, 70% of respondents indicated that they are likely or much more likely to purchase, request to purchase, or specify the Simpson product given the sequencing of the drywall installation that was enabled by the product-in-question.¹⁶

26. These findings indicate a stated preference for firewall hangers that practice the invention claimed in the ‘339 Patent. These preferences are also revealed in communication of market participants at the time when MiTek introduced its FWH product and in subsequent periods when Simpson started to develop its competing products that also practice the invention claimed in the ‘339 Patent. These market observations are discussed next in chronological order.

27. The presented evidence suggests that Simpson became aware of the market demand for the invention claimed in the ‘339 Patent as early as late 2014. It appears that Simpson then

¹⁵ Alley Declaration, ¶ 86. At the current time, Simpson’s only product line that incorporates the invention claimed in the ‘339 Patent is the DGT series of firewall hangers.

¹⁶ Alley Declaration, ¶ 90.

responded to lost sales contracts and developed its own product that incorporated the invention claimed in the ‘339 Patent so that Simpson was able to offer a competing product in the market.

28. **November 2014** discussion between multiple Simpson employees regarding the benefits of the MiTek firewall hangers over Simpson’s own products.¹⁷

[REDACTED]

29. **January 2016** discussion between [REDACTED]

[REDACTED]

[REDACTED]

Some of the discussion points include:¹⁹

[REDACTED]

[REDACTED]

[REDACTED]

¹⁷ SST0021892-93 at 92 (Hensen Ex. 25) (emphasis added).

¹⁸ MiTek acquired USP Structural Connectors in March 2011. (https://www.hardyframe.com/alona_portfolio/mittek-announces-purchase-of-usp-structural-connectors/)

¹⁹ SST0019911-16 at 15-16 (Hensen Ex. 22). Please note that this discussion took place prior to Simpson’s introduction of its own products practicing the invention claimed in the ‘339 Patent.

30. **January 2016** discussion between several Simpson employees discussing the use of MiTek’s FWH hangers instead of Simpson’s hangers.²⁰

[REDACTED]

31. **February 2016** further internal Simpson discussion about a Simpson customer specifying MiTek’s FWH hanger over the then existing Simpson hangers.²¹

[REDACTED]

32. **November 2016** additional discussion between several Simpson employees discussing the use of MiTek’s FWH hangers instead of Simpson’s hangers. The discussion also included concerns that the benefit of the MiTek hanger could result in the loss of sales for other Simpson products (and not just for Simpson’s firewall hangers).²²

[REDACTED]

²⁰ SST0020058-61 at 58 (Hensen Ex. 23).

²¹ SST0020897-99 at 97 (Hensen Ex. 21) (emphasis added).

²² SST0009425 (emphasis added).

[REDACTED]

33. The concerns were to be addressed by Simpson as at that time, Simpson was working on a firewall hanger that could mitigate the loss of sale to MiTek.

[REDACTED]

34. March 2017 internal Simpson discussion regarding the success of the MiTek FWH hangers relative to Simpson’s DHU/TF hangers.²³

[REDACTED]

35. **June 2017** internal Simpson email announcing the availability of a Simpson product that can compete with MiTek’s FWH product.²⁴ In addition to a written description of the product, a comparison table to the MiTek FWH product was included with the first comparison item motioning that the drywall can be installed “when the framing is done.”

[REDACTED]

²³ SST00031973 (Hensen Ex. 11) (emphasis in original).

²⁴ SST00031973 (Hensen Ex. 11) (emphasis in original).

36. The above discussed internal Simpson correspondence indicates that Simpson realized the advantages that the MiTek FWH hangers provided in the marketplace over the then available Simpson product. Simpson then responded to the commercial success of the FWH hanger by developing a product that also featured the invention claimed in the ‘339 Patent.

37. I also reviewed several declarations submitted by construction professionals who are familiar with the use and features of the MiTek FWH hangers and the various Simpson firewall hangers.

38. For example, with respect to MiTek’s FWH product, Mr. Joe Dunkle (a building information modeling coordinator for Milender White Construction)²⁵ states as follows:

“MiTek’s FWH hangers provide substantial practical advantages over Simpson’s DU hangers in typical construction settings. In particular, MiTek’s FWH can be installed during the production framing phase and before the drywall is installed.”

39. With respect to the use of Simpson’s DU hangers, Mr. Dunkle states as follows:

“Simpson’s DU hangers often require coordination with drywall pre-rock installation. In my experience, when DU hangers are specified, the installation is often delayed until the backout framing crew returns after pre-rock drywall installation, creating workflow inefficiencies and potential scheduling conflicts.”

40. Similarly, Mr. Holmes (President of Accel Framing, Inc.)²⁶ stated as follows:

“The FWH hanger and MiTek’s innovative installation method (the “FWH Method”) has transformed our approach to constructing fire-resistive wall assemblies by improving efficiency, reducing delays, and providing superior structural solutions compared to traditional methods.”

“With the FWH Method, my framing crews can complete the framing before drywall arrives, which expedites the path to complete a weather-tight build and permits us to achieve “roof dry-in” status quickly and efficiently.”

²⁵ Mr. Dunkle has worked at his current position since January 2022. Prior to that he was a carpenter apprentice from November 2020 to December 2021. In his capacity at Milender White, Mr. Dunkle also serves as a superintendent on projects and manages and trains framing crews on job sites. Mr. Dunkle’s full experience and educational background are set forth in his declaration.

²⁶ Mr. Holmes is a licensed general contractor with more than 38 years of experience in the building industry. Mr. Holmes was the General Manager at HNR Framing Systems for 12 years. During that time, he was involved in the construction of approximately 3,000 multi-family and single family housing units. Mr. Holmes’ full experience is set forth in his declaration.

41. Mr. Matthew Church (a Senior Principal at Davis & Church, LLC)²⁷ expanded on the statements made by Messrs. Dunkle and Holmes. He states as follows with respect to the construction method prior to the invention claimed in the ‘339 Patent:

“Prior to MiTek's introduction of its FWH hanger, maintaining continuity of fire ratings where horizontal framing members intersect walls or beams was challenging—especially with 2-hour rated walls requiring a double-layer of gypsum board on one or both faces.”

...

“These legacy methods were also more labor-intensive, required additional inspection, and frequently led to inconsistent outcomes due to weather exposure and variations in quality of construction.”

42. Mr. Church then contrasted the prior construction method with the new construction method allowed by the introduction of the FWH hangers that practice the invention claimed in the ‘339 Patent:

“This advancement was a game changer in the rough framing phase of the construction process, offering a solution to the issue I and others had recognized in the years leading up to the introduction of the MiTek FWH hanger. It offered a more reliable structural connection, unaffected by weather conditions, and removed delays associated with pre-rocking sequencing—ultimately accelerating project timelines. Since its release, we’ve consistently specified the FWH hanger and FWH Method in multifamily projects instead of older traditional methods requiring pre-rock.”

...

“I have actively recommended the FWH hanger to contractors, architects, and developers due to its innovative design, installation method and significant potential to improve the quality of construction on multifamily projects. The major advantage lies in eliminating the pre-rock process.”

43. Mr. Church further contrasted the benefits firewall hangers that practice the claimed invention versus products that do not practice the invention. As per Mr. Church, the benefits of the FWH hangers over the Simpson DU hangers were clear:

“I’m aware that Simpson released its DU hanger around the same time MiTek introduced the FWH hanger. At first, I was intrigued by the idea of Simpson

²⁷ Mr. Church is a licensed professional engineer with 30 years of experience in the construction industry and has extensive experience in multi-family construction projects and has been involved in over 500 of such developments. Mr. Church’s full experience is set forth in his declaration.

offering a fire wall hanger. However, once I realized that it still required the pre-rock process, it became clear to me that it fell short of the solution the industry needed and there was little to no benefit to specifying it on our multi-family projects. To the best of my knowledge, in every project where I’ve specified the FWH hanger, it was installed prior to any gypsum board. If a contractor had intended to pre-rock, I almost certainly would have explained the benefits of using the FWH hanger before moving forward with an alternative approach.”

44. These statements are confirmatory of market demand for the invention claimed in the ‘339 Patent and also confirm the results of the Alley Survey and the statements made by Simpson employees as discussed above. The invention claimed in the ‘339 Patent was a primary driver of market demand for firewall hangers. As confirmed by Mr. Church’s statements, and consistent with the survey results, Simpson’s internal communication, and the statements made by Messrs. Dunkle and Holmes, MiTek’s FWH hangers offered a clear advantage over the next best available firewall hanger, Simpson’s DU hangers.

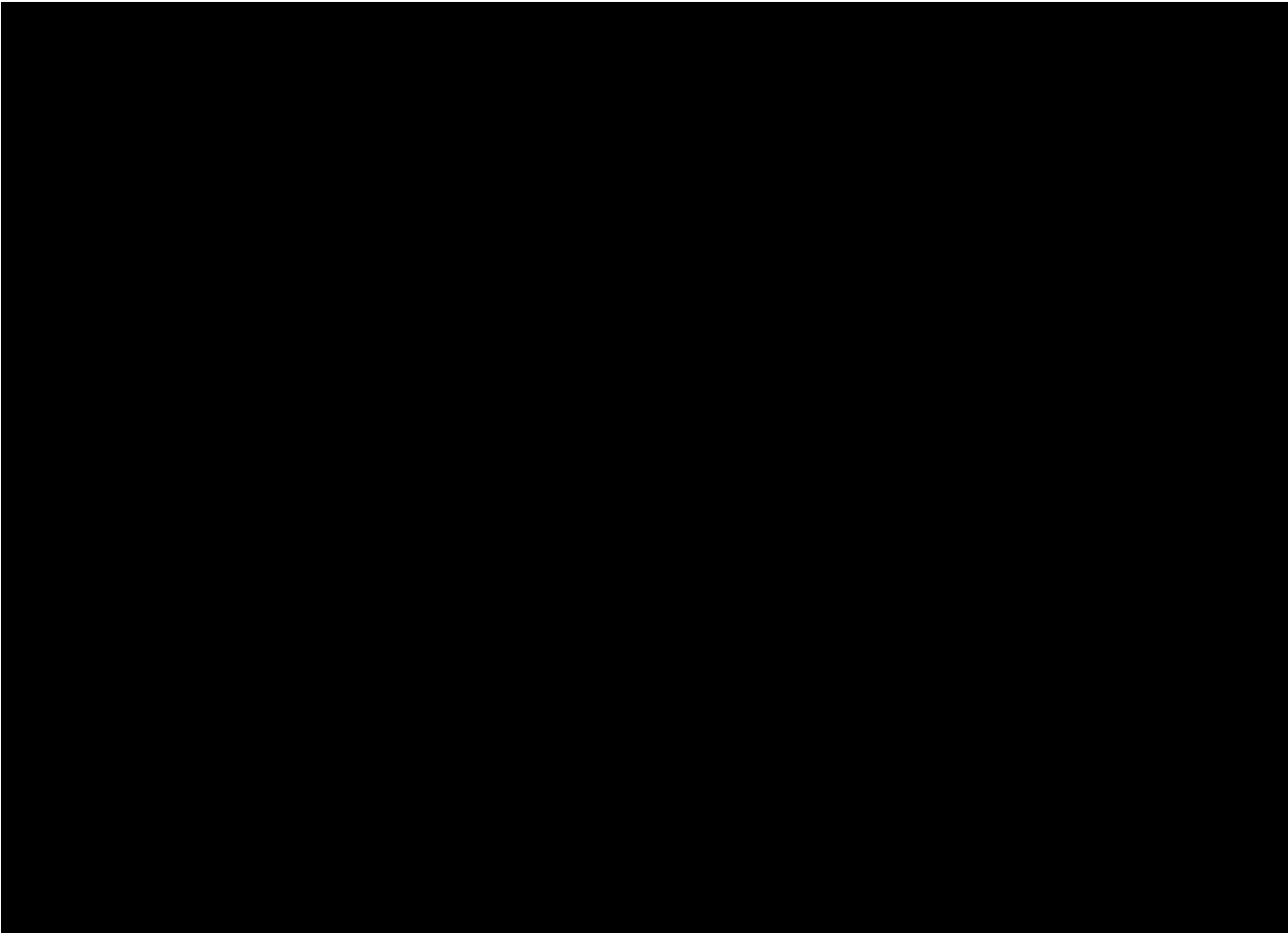
B. Application of Revealed Preference Analysis to Invention Claimed in ‘339 Patent

45. For my revealed preference analysis, I analyzed the sales of products that incorporate the invention claimed in the ‘339 Patents and then compared those sales to sales of products that do not embody the invention claimed in the ‘339 Product.²⁸

46. As discussed above, MiTek’s FWH product series and Simpson’s DG, DGF, and DGT product series embody the invention claimed in the ‘339 Patent. These sales are then compared to Simpson’s sales of its DU firewall hangers (as the DU series does not include the invention of the ‘339 Patent).

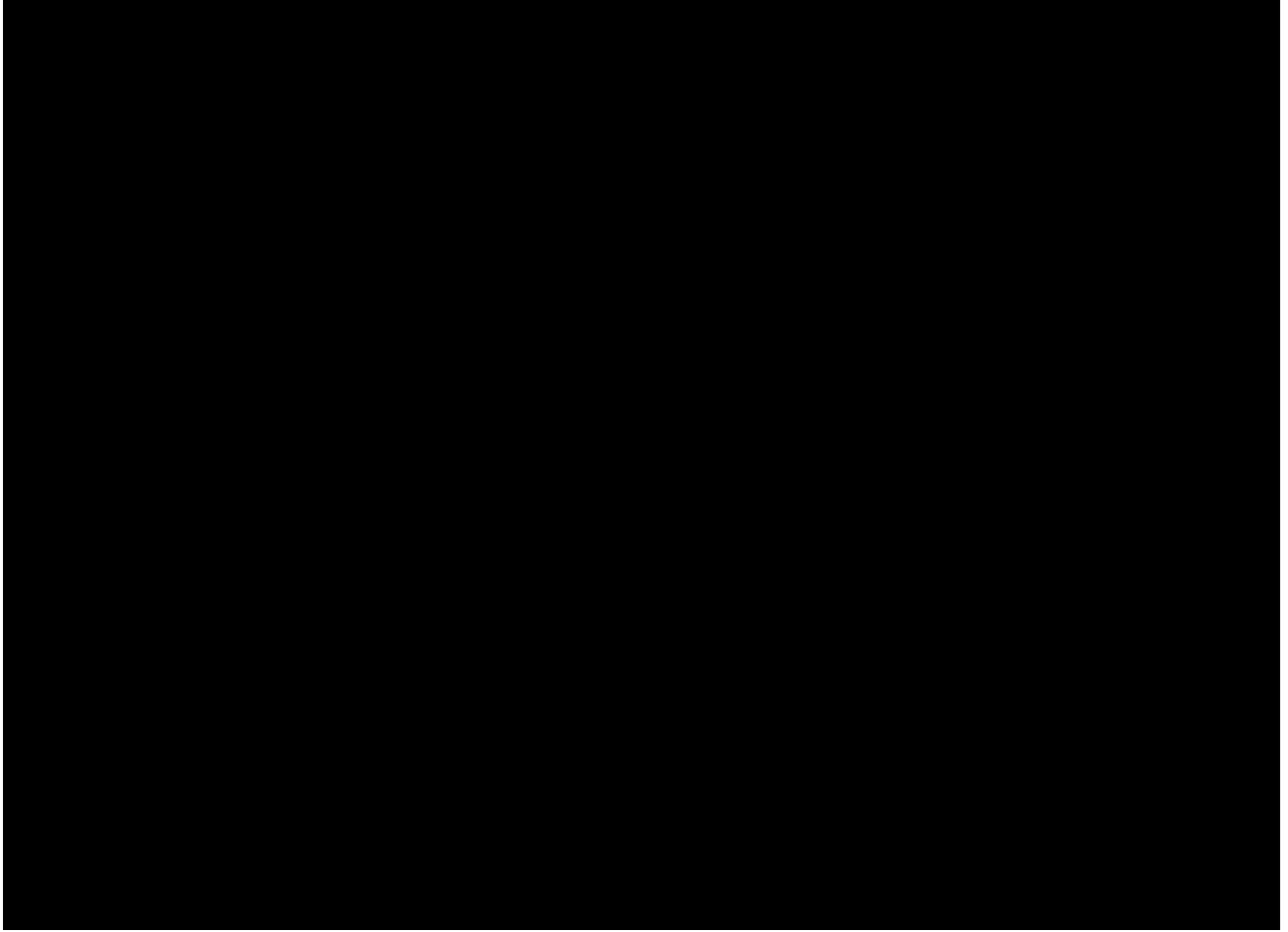
²⁸ My analysis in this section is based on data relied upon by Dr. Serwin in his February 2025 Report. Additionally, I analyzed Simpson’s DU and DGF product revenues and units sold data for 2021 and partial 2022. Based on this analysis, I determined that the relative proportions of units sold are similar to revenues achieved. [REDACTED] (data as per SST0077022).

47. As set forth in **Figure 1** below, the commercial success of the products that embody the invention claimed in the ‘339 Patent over the product that does not embody the invention claimed by the ‘339 Patent is readily apparent. As the market became more aware of the benefits of the invention claimed in the ‘339 Patent, sales started to increase at an increasing rate from mid-2014 through mid-2022. Since mid-2022, monthly sales have fluctuated between [REDACTED] [REDACTED] while monthly sales of the DU product have languished at approximately [REDACTED]



48. The difference in sales volume is confirmatory of the stated preference analysis and a clear indicator of the demand for products that embody the invention claimed in the ‘339 Patent.

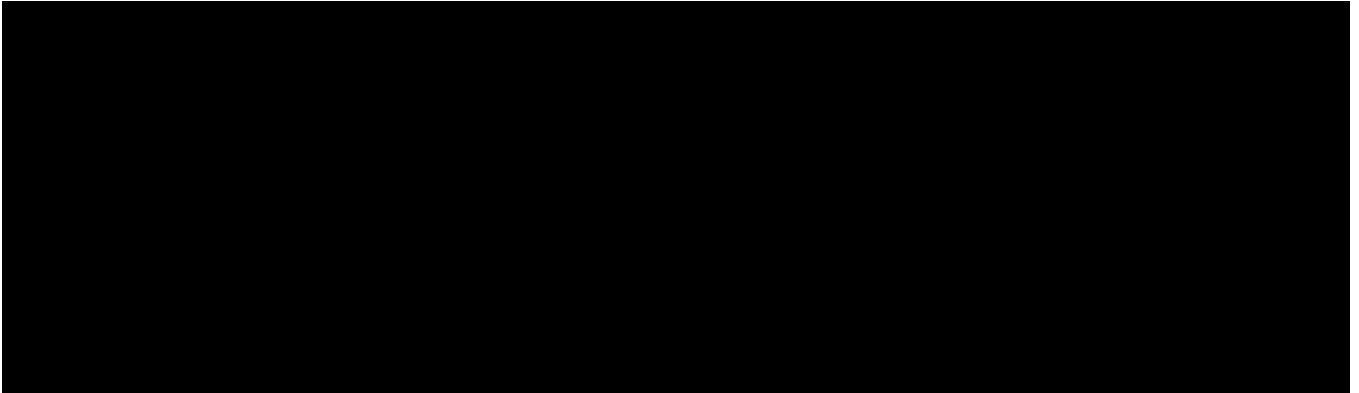
49. As per discussions with Mr. Michael Nelson of MiTek (MiTek’s current National Account Director for Distribution)²⁹, I understand that in the market for 2-hour fire rating firewall hangers, only MiTek and Simpson offer competing products.³⁰ As shown in **Figure 2**, sales of firewall hangers that embody the invention claimed in the ‘339 Patent achieved an increasing market share from 2014 through 2020. The market share of products that embody the invention of the ‘339 Patent increased from approximately 53% in 2014 to approximately 88% in 2020 and then leveled out at approximately 86% through 2023.



²⁹ Prior to being MiTek’s National Account Director for Distribution, Mr. Nelson was a MiTek Product Portfolio Manager from September 2019 to April 2021, and a MiTek Global Product Portfolio Manager from April 2021 to January 2023. In these roles he managed structural connector products.

³⁰ My understanding is consistent with the assumptions made by Dr. Serwin in his report. Dr. Serwin testified that he “was asked to assume the relevant market were the firewall hanger products sold by Simpson and MiTek” (Serwin Deposition, taken April 17, 2025, p. 90:15-17; see also, pp. 90:5 – 91:15).

50. I also analyzed the average price premium for Simpson products incorporating the invention claimed in the ‘339 Patent relative to Simpson firewall hangers that do not incorporate the invention claimed in the ‘339 Patent. As set forth in **Table 1**, over the 2017 – Sep 2022 time period, the price premium varied between approximately 12% and 19%.



51. The analyzed data shows that Simpson priced products that practice the invention claimed in the ‘339 Patent (Simpson’s DG and DGF products) at a premium relative to their next best products that did not practice the invention claimed in the ‘339 Patent (Simpson’s DU products).

52. During the 2018 to October 2023 time period, the Simpson products that practice the claimed invention have an approximately 58% market share of two-hour, fire-rated firewall hangers, while I understand that Simpson’s has a roughly 85% market share in structural connectors. Therefore, MiTek’s demonstrated market success when competing with Simpson in the two-hour, fire-rated firewall hanger market is an additional indication that the claimed invention is a primary driver of the commercial success of the firewall hangers practicing the claimed invention.

³¹ 2017 – 2020 data based on SST0018120; 2021-Sep 2022 data based on SST0077022.

VI. CONCLUSION

53. Based on my analyses and the totality of evidence reviewed in this matter (including survey results and declarations submitted by construction professions), the invention claimed in the '339 Patent represents a primary driver of the economic demand for products that incorporate the invention claimed in the '339 Patent.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 26th day of May, 2025.


Dwight J. Duncan, CFA

HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY

Exhibit A

CV of Dwight J. Duncan, CFA

EconLit LLC

Economic and Litigation Consulting

Dwight J. Duncan, M.S., CFA

Position

Mr. Duncan is the founder and Managing Director of the Phoenix, Arizona based firm of EconLit LLC. He is an economist who also holds the Chartered Financial Analyst designation and has nearly 30 years of experience in economic and financial consulting. Areas of expertise include economic analysis, intellectual property analysis, securities litigation, valuation of closely-held businesses, environmental damage quantification, class certification/class action analysis, general lost profits analysis and minority shareholder disputes. He has consulted with and been engaged as an independent expert witness for companies ranging from sole proprietorships to Fortune 500 in a wide range of industries throughout the U.S.



Selected Experience

Economic Analyses

Evaluated the economic feasibility of a proposed project to store Central Arizona Project ("CAP") water in natural underground water tables. The project consisted of an analysis of the "market" for storing immense quantities of water for later use by large municipal water authorities throughout the Southwest. Demographic studies of developing metropolitan areas were conducted to project future water demand. Anticipated water supply given existing legal water rights and given proposed legislation to allow the buying and selling of water across state boundaries was also analyzed.

Analyzed the impact of a multimillion-dollar advertising campaign on the brand value of an international insurance corporation. The analysis was centered on expenditures tied to the Summer Olympic Games.

Evaluated the economic impact of the horse and greyhound dog racing industry on the local economy. Conducted primary research to quantify the impacts of the racing industry for use in proposed gaming legislation. Analysis included an assessment of the employment and income multiplier effects on other sectors of the local economy.

EconLit LLC

Economic and Litigation Consulting

Analyzed the economics of the “Rent-To-Own” industry. Performed survey research to model the economic paradigm utilized by “Rent-To-Own” stores in a wide variety of business segments: consumer electronics, computers, appliances, and furniture. Parameters studied included typical rental terms, financing implications, percentage of rentals through term to buyout, and profitability by segment.

Analyzed the sub-prime auto industry for a potential investment of approximately \$30 million. Conducted primary research into the underlying economic forces facing the industry and evaluated likely outcomes under different sets of assumptions regarding the economy overall and the industry in particular.

Evaluated development fees assessed by various municipalities for reasonableness in relationship with the impact imposed by both proposed and existing developments. Fees analyzed include sewer connection fees, water connection fees, emergency service fees, and public library fees.

Commercial Litigation

Lost Profits / Breach of Contract Analyses

Analyzed prevailing macroeconomic factors, changing demographics, changes in competing operations, customer trends, and media analysis. Statistical analyses included econometric modeling of historical sales in relation to overall sales and models to quantify damages arising from the alleged breaches of contract, business slander, breaches of fiduciary duties, breaches of franchise agreements, anticompetitive behavior, and other general commercial damage claims.

Industries analyzed include compressed natural gas distribution and retail sales, retail jewelry, gas stations and convenience stores, collectible dolls, hearth product distribution and retail operations, food distribution, electronics distribution, real estate brokerages, securities brokerages, internet application service providers, internet retail operations, specialty wheel manufacturers, microchip manufacturers, high-tension power line equipment manufacturers, chiropractic practices, steel rebar fabricators, brake service franchises, health care providers, asset disposal service providers, contract research organizations, restaurants, apartments, commercial real estate, master-planned communities, medical practices, dental practices, accounting practices, tankless water heater distribution and retail operations.

Minority Shareholder Disputes

Conducted financial and economic analysis to evaluate corporate actions as potentially oppressive to minority shareholders. Quantified economic damages to minority shareholders as

EconLit LLC

Economic and Litigation Consulting

a result of oppressive actions. Industries analyzed include national self-storage facilities, real estate lending, steel rebar fabrication, electrical power management devices, architectural firms, medical practices, dental practices, accounting practices, construction companies, and casino gaming.

Legal Malpractice

Quantified damages related to alleged legal malpractice in divorce proceedings. Analyzed the timing and implications of corporate restructuring, multiple issued financial statements versions, historical store-level company operations, industry trends and the value of the underlying business.

Personal Injury / Wrongful Death / Wrongful Termination

Analyzed complex personal injury, wrongful death and wrongful termination claims involving multiple company pension funds, company retirement saving funds, bonus eligibility and other related compensation issues. Professions analyzed include nurses, medical doctors, engineers, construction workers, barbers, highway workers, professional services, and business owners.

Wage and Hour Class Action

Conducted comprehensive analyses of compliance with wage and hour meal break, rest break and vacation day regulations. Industries analyzed include pest control services, retail home décor, women's clothing, reservation call center for rail transportation, retail auto sales, payday loans, and utilities distribution.

Bankruptcy

Analyzed and evaluated the feasibility of various plans presented to the court in bankruptcy proceedings. Industries analyzed include apartments, condominiums, timeshare units and housing construction. Analysis included industry trends, local real estate trends, macroeconomic factors and detailed financial statement modeling.

Finance / Securities Instruments

Evaluated a complex financial model developed to ascertain the financial feasibility of a 30 million peso international joint venture. Evaluated partnering alternatives, branding strategies, and profitability impacts on the United States joint venture partner.

EconLit LLC

Economic and Litigation Consulting

Analyzed a financial model of a collateralized mortgage obligation instrument consisting of 18 types of bonds from multiple commercial and residential mortgages. The work involved discounted cash flow analysis and extensive sensitivity analysis.

Evaluated potential corporate restructuring alternatives in connection with a multi-million dollar collateralized transaction of self-storage properties. Also determined associated impacts on the value of the underlying business and consulted on appropriate modifications to the transaction to maximize business value.

Construction Defects

Analyzed construction defect claims associated with various types of real estate assets including single family residential, apartments, condominiums, hotels, and office. Performed extensive statistical analysis of sampling design, identification of appropriate sampling frames, statistical sample size selection sufficient to achieve meaningful confidence levels and associated margins of error and evaluation of proposed extrapolation of sampling results.

Intellectual Property Analyses

Analyzed the economics of the United States beef industry in connection with licensing arrangements for an innovative tenderization technique subject to a patent. Analyzed competing technologies, the economic feasibility of the proposed process, the applicable market segment, pricing strategies, partnering strategies, and image branding through packaging and advertising. The analysis was used by the licensor in successfully negotiating a license fee arrangement for use of the technology.

Performed a detailed apportionment analysis in a case alleging infringement of a software copyright agreement. The project included a detailed industry analysis, development of an extensive database of software products, analysis of advertising, packaging and customer usage, as well as customer satisfaction surveys. Prepared a report to refute the \$28 billion damage claim.

Developed disgorgement damage and lost profits claim for a mainframe utility software program. Analyzed the infringing company's financial statements and determined appropriate deductible expenses to arrive at disgorgement profits. Also performed in-depth worldwide analysis of the subject company's customers to determine which customers switched to the infringing software.

Analyzed the golf industry accessory markets domestically and internationally to evaluate a claim arising from an allegedly lost international patent. Developed damage model to evaluate lost licensing opportunities in foreign markets.

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Performed lost profits and reasonable royalty calculations for use in trial in a case alleging infringement of patented, coded optical-traffic preemption systems. The analysis included a definition of the relevant market and detailed analysis of the *Panduit* factors as well as the *Georgia Pacific* factors.

Analyzed economic damages arising from the theft of trade secrets. Industries analyzed include mortgage brokerage, high-tension power lines, and residential real estate renovation and resale.

Securities Litigation

Quantified damages stemming from an alleged manipulation of an international commodity market. Analyses included data identification and collection, development of a database of commodity price explanatory variables, econometric model specification and estimation, and the projection of prices in the absence of the alleged manipulation.

Valuation of Closely-Held Businesses

Determined the fair market value of closely held businesses. Valuations included three major types of analyses. Income Approach analyses included review of pro-forma financial statements, discounted cash flow analyses, and financial ratio analyses. Market Approach analyses included extensive research of different industries, assembling financial information on selected companies, and analyses of financial statements for comparison purposes. Cost Approach analyses included researching relevant historical information on asset costs, estimating appropriate depreciation rates, and making adjustments to reflect current market conditions.

Conducted valuation assignments in various industries including international trucking distribution, restaurant supply, restaurants, international ice-cream franchise, dairy distribution, national self-storage facilities, specialized shipping containers, educational seminars, fast-food franchises, real estate general partnerships, dental supply distribution, latex glove distribution, family limited partnerships, residential home builders, investment general partnerships, hotel joint ventures, educational materials publishers, commercial and retail tire companies, tire retreading operations, internet application service providers, workman compensation service providers, insurance brokerage houses, contract research organizations, temporary staffing agencies, securities brokerages, real estate brokerages, architectural firms, engineering firms, medical practices, dental practices, autistic music therapy, and accounting practices.

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Environmental Damage Quantification

Commercial / Residential Environmental Damages

Quantified the magnitude of property value diminution in a wide array of residential and commercial property arising from environmental contamination using economic analyses. Analyses included utilizing demographic and/or census data to determine areas comparable to the subject areas, extensive primary research to develop sales transaction histories over extended time periods, and complex multivariate regression analysis to analyze the property value diminution claims by comparing the subject areas to unimpacted areas. Media coverage of the contamination issues was also analyzed.

Analyzed numerous sources of environmental contamination including soil, air, and groundwater contaminated with radioactive materials, TCE's, PCB's and various other chemicals. Also conducted this type of analysis in relation to landfill citings, landfill operations, and wastewater treatment facilities. Range of geographic experience includes: Alabama, Arizona, California, Colorado, Florida, Georgia, Illinois, Missouri, Nevada, New Mexico, New Jersey, New York, Oklahoma, Texas, Utah, Virginia, and Washington D.C.

Natural Resource Damages

Consulted in the cooperative assessment of natural resource damages for the PCB contamination of the 39-mile Fox River in Wisconsin. Analyses included the review of survey design, survey implementation, data gathering, data interpretation, and extensive statistical modeling of revealed and stated preference data.

Analyzed a multi-billion dollar NRD assessment associated with groundwater contamination in the southwestern United States. Analyses included evaluation of water replacement models, hedonic regression analysis and lost state tax revenue claims.

Class Certification / Class Action Analyses

Conducted economic analysis to develop evidence relating to the evidentiary requirements of class certification as outlined in Federal Rule of Civil Procedure 23. Performed extensive analyses of census data, geographic characteristics, exposure pathways, and potentially intervening factors when evaluating the appropriateness of class certification.

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Merger & Acquisition Analysis

Analyzed the potential effects on a company's income statement, balance sheet, and statement of cash flows resulting from the acquisition of another company. The companies had a combined market value of \$450 million.

Advised a privately held company during an acquisition by a publicly held corporation. Performed financial statement analysis, business valuation and various due diligence activities on behalf of the client. Advised the client on alternative deal structures and associated implications.

Consulted with the board of directors of a national milling company on a complex real estate project. The project involved joint ventures to develop a hotel, four office towers, 150,000 square feet of retail space and hundreds of residential units. Analyses included evaluation of financing alternatives through Improvement District bonds, assessment of cash flow probabilities, review of key zoning proposals and modeling of the entire project's cash flows. Ultimately presented the results of sophisticated Monte-Carlo financial simulations to the board of directors who used the findings to determine the company's strategy for the project.

Teaching Experience

Graduate Macroeconomic and Microeconomic Principles

Topics covered included application of microeconomic analysis to managerial decision-making at the firm-level in areas of supply and demand, production, cost and pricing as well as evaluation of competitive strategies and the economics of the firm.

Macroeconomic Principles and Intermediate Macroeconomics

Topics covered included unemployment/full employment, inflation/price stability, economic growth/gross national product, determination of national income, and monetary and fiscal policies.

Microeconomic Principles

Topics covered included functioning of markets (demand and supply analysis), elasticity's, theory of the firm (profit maximization), industry performance, allocation of resources, and government regulation.

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Other Courses

Taught economics-related sections of annual Power Learning Series for Financial Advisory Services (a national training seminar for PricewaterhouseCoopers): 1995, 1996, 1997, and 1999.

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Publications (Previous 10 years)

“Arizona Blue Chip Economic Forecast”; Monthly Forecast Panel Member, 1995 – Present.

“Western Blue Chip Economic Forecast”; Monthly Forecast Panel Member, 1995 –Present.

Professional History

EconLit LLC, Managing Director (2000 – Present)¹

Arizona State University, Adjunct Professor of Economics in the ASU MBA program (2001 - 2004)

PricewaterhouseCoopers LLP, Director (final position) -- Financial Advisory Services (Dispute Analysis & Investigations Group / Economics and Statistics Practice, 1994 – 2000)

Arizona State University, Faculty Associate / Teaching Assistant in the Department of Economics (1992 – 1993)

Orbital Sciences Corporation, Consultant to the Chief Financial Officer (1992 –1994)

Education and Training

Chartered Financial Analyst (CFA[®]) conferred by the CFA Institute.

M.S., Economics, Arizona State University. Areas of specialization: Microeconomics, Macroeconomics, Finance, International Finance, and Econometrics.

B.S., Economics, Arizona State University, Summa cum Laude.

Other

NITA (National Institute for Trial Advocacy), Board of Trustees (2009, 2010, 2011)

- Audit Committee – Chair (2010, 2011)
- Executive Committee (2010, 2011)
- Investment Committee (2010, 2011)

¹ EconLit LLC was an independent subcontractor to Lancaster Consulting LLC on certain engagements during 2000 - 2004.

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Testimony History (Previous 4 Years)

HRH, LLC vs. Teton County, Wyoming et al. (United States District Court for the District of Wyoming).

Trial – June 25, 2021

Gamino adv. Legacy Construction (Private Arbitration).

Trial – November 19, 2020

Johnson vs. Hodges (Second Judicial District Court of the State of Nevada in and for the County of Washoe).

Deposition – December 18, 2020

Pellerin vs. FerrellGas, L.P. (Superior Court of Arizona, Mohave County).

Deposition – December 22, 2020

In re The Delbert R. and Jewell M. Lewis GST Non-Exempt Martial Irrevocable Trust (Superior Court of Arizona, Maricopa County).

Deposition – April 1, 2021

Himelsein Mandel Fund Management, LLC, v Fortress Investment Group, LLC (Superior Court of the State of California for the County of Los Angeles).

Deposition -- April 19, 2021

In re the Marriage of J. Barbour and J. Barbour II (Superior Court of Arizona, Maricopa County).

Deposition -- May 21, 2021

Trial -- September 20, 2021

Lisa Noron, et al. v Joseph Arpaio, et al. (United States District Court, District of Arizona).

Deposition -- June 16, 2021

RJP-AZ, L.L.C., v Safeguard Estate and Financial, LLC et al. (Superior Court of Arizona, Maricopa County).

Deposition -- August 4, 2021

Kimberly Kennedy v Mohave County et al. (United States District Court, District of Arizona).

Trial -- August 10, 2021

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Fahrenheit Homeowners Association et al. v CityMark Development LLC, et al. (Superior Court of California, San Francisco County).

Deposition -- September 23, 2021

John Stemmelin v Matterport, Inc. et al. (United States District Court, Northern District of California, San Francisco Division).

Deposition – January 5, 2022

Green Cross Medical, Inc. v John V. Gally (Superior Court of Arizona, Navajo County).

Trial – February 16, 2022

Garda USA, Inc. v Sun Capital Partners, Inc. et al. (Supreme Court of the State of New York, County of New York).

Deposition -- February 23, 2022

Funko, LLC and Loungefly, LLC v Trevor Schultz, Dale Schultz et al. (JAMS – Southern San Diego, California).

Deposition -- April 29, 2022

City of Casa Grande Fire Department before the Office of Administrative Hearings.

Trial – June 10, 2022

Toll Brothers, Inc. and Porter Ranch Development Company v Sempra Energy, Southern California Gas Company, et al. (Superior Court of the State of California, County of Los Angeles, Central Civil West).

Deposition – July 12 & 13, 2022

Allstate Insurance Company, et al. v Marjorie Belsky, MD, et al. (United States District Court, District of Nevada).

Deposition – August 12, 2022

Soilworks, LLC v Vermillion Environmental Products and Applications, Inc. et al. (Superior Court of Arizona, Maricopa County).

Deposition – August 23, 2022

Trial – January 26, 2023

Windsor Capital Group, Inc. v John Moller et al. (Superior Court of the State of California, County of Santa Barbara)

Trial September 19, 2022

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Brady Linen Services, LLC, v Las Vegas Resort Holdings, LLC et al. (District Court Clark County, Nevada).

Deposition – October 19, 2022

Deposition – August 4, 2023

Trial - May 24, 2024

Sorrento Therapeutics, Inc. et al. v Zhenwei “David” Miao et al. (Superior Court of the State of California, County of San Diego).

Deposition – November 15, 2022

Mark Hunt v Zuffa, LLC d/b/a Ultimate Fighting Championship et al. (United States District Court, District of Nevada).

Deposition – December 5, 2022

Pacific West LLC v CY4422Y et al. (District Court, Clark County, Nevada).

Deposition – January 19, 2023

John Masden et al. v Lake Havasu City et al. (Superior Court of Arizona, Maricopa County).

Deposition - February 7, 2023

Ravi Galhotra et al. v Desert View Contractors, LLC et al. (Superior Court of Arizona, Maricopa County).

Deposition - March 6, 2023

Arbitration – May 12, 2023

Helping Handz, LLC v Anavel Vasquez (American Arbitration Association – Commercial Arbitration).

Deposition - April 10, 2023

152 Geary St. LLC v Harvest Health & Recreation, Inc. (Superior Court of Arizona, Maricopa County).

Deposition - April 19, 2023

Pedro and Magala Martin v Wave Neuroscience LLC (JAMS International Arbitration)

Deposition - May 16, 2023

Trial – January 31, 2024

H&S Field Services Inc. v Pinto Valley Mining Corp. (Superior Court of Arizona, Gila County).

Deposition - July 26, 2023

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Hawaii Foodservice Alliance, LLC v Meadow Gold Daries Hawaii, LLC et al. (United District Court, District of Hawaii).

Deposition - September 15, 2023

Industrial Park Center, LLC v Star Fisheries, Inc. (Superior Court of Arizona, Maricopa County).

Deposition - November 21, 2023

LifeScience Technologies, LLC v Mercy Health, et al. (United States District Court, Eastern District of Missouri, Eastern Division)

Deposition - January 23, 2024

Deposition – March 26, 2024

GCHI Land Holding, LLC v Stearns Bank National Association (Superior Court of Arizona, Maricopa County).

Deposition - February 15, 2024

Joann Henderson et al. v Aqua Illinois, Inc. (Circuit Court of the 12th Judicial Circuit, Will County, Illinois).

Deposition March 15, 2024

Black Mesa Investment Services, LLLP et al. v Kishlay Anand et al. (American Arbitration Association - Commercial Arbitration).

Trial - May 10, 2024

Scott Roberts et al. v Nicole Roberts et al. (District Court of Travis County, Texas).

Deposition - June 11, 2024

Trial - July 24, 2024

In re: The Delbert R. and Jewell M. Lewis GST Non-Exempt Marital Irrevocable Trust (Superior Court of Arizona, Maricopa County).

Deposition – November 7, 2024

Gray Services LLC v ZOM Holding, Inc. (Superior Court of Arizona, Maricopa County).

Deposition – December 12, 2024

Menvas 22 LLC v State of Arizona et al. (Superior Court of Arizona, Maricopa County).

Deposition – January 22, 2025

Deposition – February 5, 2025