UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SKECHERS U.S.A., INC.,
"Petitioner"

v.

FAST IP, LLC,
"Patent Owner"

U.S. Patent No. 12,274,325

Title:
Rapid-Entry Footwear Having A Stabilizer and An Elastic Element

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DECLARATION OF ANGUS WARDLAW
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 12,274,325

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Skechers EX1005-p. 2
Skechers v. FAST IP

I, Angus Wardlaw, declare as follows:

I. INTRODUCTION AND ENGAGEMENT

1. I have decades of experience in the design and development of footwear, as described in Section II below. I have been asked by Skechers to analyze and provide explanations regarding certain matters relating to those subjects. I was retained in connection with this matter in January 2026.

2. My opinions are based on my years of education, research, and experience with footwear, as well as my investigation and study of relevant materials. In forming my opinions, I have considered and may rely upon the documents and information identified below, as well as all documents and information identified in Skechers' Petition for *Inter Partes* Review of U.S. Patent. No. 12,274,325, including the exhibits I understand will be submitted with the Petition (namely, EX1001 to EX1039). Numbered exhibits cited below refer to exhibits to the Petition.

II. BACKGROUND AND QUALIFICATIONS

3. I am a footwear design and development engineer and the founder of Nimlin Sports Ltd., a footwear consultancy firm based in Hong Kong. My current *curriculum vitae* is attached as Appendix A to this declaration.

4. I have been involved in footwear design, development, and innovation for more than twenty years, with a focus on the ergonomic and functional

engineering elements of footwear design, such as the physical parameters by which components of footwear should be constructed to achieve their desired functions. My career has included research and development and leadership positions at global footwear companies, including at adidas and ANTA.

5. I obtained my Bachelor of Engineering in 2002 from the Department of Mechanical Engineering at the University of Edinburgh, Scotland. My research focused on solid mechanics and materials sciences. After completing my B.Eng., I started my career on the adidas Innovation Team in 2003, focusing on developing new footwear technologies. In 2011, I was promoted to Senior Development Engineer within the adidas Innovation Team, focusing on product innovation and development within the running and lifestyle footwear categories. By 2014, I was Director of Future Running, leading a team focused on driving innovation in footwear design.

6. One of the projects I worked on at adidas was the development of Boost technology, which generally relates to the use of expanded thermoplastic polyurethane in midsoles, to provide enhanced energy return, durability, and flexibility to performance footwear. Boost was highly successful, resulting in a number of additional product lines. In particular, I directed the innovation of adidas' Ultra Boost, which was focused on addressing strain and tension on the foot. I was featured in a production by HYPEBEAST concerning the design, technical

development, and features of the adidas Ultra Boost, which is available at https://youtu.be/hw1tE-JIMW4?si=kSWAvTgoMwY31PWE.

7. In 2017, I left adidas to become the Head of Innovation for Footwear and Apparel at ANTA, a position I held until January 2021. ANTA is one of the largest sportswear companies globally, by revenue. During my time at ANTA, I managed a large team of designers and engineers, and helped establish laboratories for sports science, mechanical engineering, and 3D printing. My responsibilities at ANTA included driving innovation in footwear design, sports engineering, polymer engineering, and 3D mold manufacturing processes.

8. From 2022 on, I have worked as a freelance footwear and innovation consultant under my consultancy firm, Nimlin Sports Ltd, advising a number of major brands on design and engineering matters. Additionally, between 2023-2024, I was Vice President of Footwear Operations at FILA, a major footwear brand.

9. I am also a named inventor on multiple patents relating to footwear technologies, including materials, manufacturing methods, and specific footwear constructions. For example, I am a named co-inventor of U.S. Patent No. 11,350,700 ("the '700 Patent), titled "Shoe with adaptive heel element," which was filed in September 2018 and relates to improvements in heel construction for footwear to "improve the fit, wearing comfort and manufacturing of the shoe." EX1036, Title, 1:52-56. Similarly, I am a named co-inventor of U.S. Patent No. 10,759,096 ("the

’096 Patent”), titled “Expanded polymer pellets,” which was filed in April 2015 and relates to the manufacturing of “cushioning elements for sports apparel, such as for producing soles or parts of soles of sports shoes.” EX1037, Title, Abstract.

10. Additional details concerning my education and employment are set forth in my curriculum vitae, which is attached hereto as Appendix A.

11. I am being compensated for my time spent on this matter at a rate of $300 per hour, plus expenses. My compensation is not contingent on the outcome of this matter or the opinions I offer. All opinions in this declaration are my own.

III. LEVEL OF SKILL IN THE ART

12. I have been asked to provide my opinions regarding the qualifications and level of skill of a person of ordinary skill in the art (“POSITA”) at the times of July 2019 and July 2020.

13. I am not an attorney. In expressing my opinions, I am relying on certain basic legal principles that have been explained to me.

14. I understand that a POSITA is a hypothetical person of ordinary skill in the field to which an invention pertains. I understand that a POSITA is not a layperson, but is also not of extraordinary skill. Instead, a POSITA is an individual with the same level of skill as a typical practitioner of the art at issue.

15. Applying those principles, I believe that a POSITA in the field of the ’325 Patent in July 2019 or July 2020 would have had a bachelor’s degree in

engineering and at least a few years of experience in designing and manufacturing shoes, or equivalent academic and work experience. Such a person would have at least a general understanding of general construction processes and materials used to manufacture footwear.

16. My opinions regarding the level of ordinary skill in the art are based on, among other things, my years of experience in the above field, my understanding of the fundamental qualifications that would be relevant to a person tasked with constructing articles of footwear like those described in the '325 Patent and designing their components, and my familiarity with the backgrounds of colleagues and coworkers, both past and present.

17. Although my qualifications and experience exceed those of the hypothetical POSITA defined above, my analysis and opinions are based on the perspective of a POSITA, as described above, as of the relevant time frame.

IV. FOOTWEAR DESIGN CONSIDERATIONS

A. Heel Counter Construction

18. Heel counters have long been used to strengthen the heel portion of footwear and support the heel of the foot, as well as retain the shape of the heel portion of the footwear. A heel counter may also be referred to as a "stiffener." For example, the Complete Footwear Dictionary explains that a "counter" is a "stiffener or reinforcement in the back-part of the shoe to retain shoe shape and offer stability

and support to the heel of the foot. The counter may range from soft to rigid," and "can be pre-molded or flat and then molded to the last[1] by pressure." EX1017, p.6-7.

19. Likewise, the Shoe Material Design Guide explains that footwear reinforcements like heel counters allow footwear to "hold its shape, protect the foot, provide support, and stay together," and states, "[t]o make a shoe with solid ankle support, it must have a heel counter." EX1038, 9-10. The Shoe Material Design Guide provides a number of examples of heel counter materials, including "thick leather, rubber, non-woven chemical sheet, injection molded plastic, or heat moldable plastic sheet." *Id.*, 10-11.

20. For example, the '700 Patent, of which I am a co-inventor, discusses footwear that includes a "heel counter arranged in the heel portion" and "comprises a lateral portion and a medial portion for supporting the heel of a wearer's foot," EX1036, 1:66-2:1, explaining that "the heel counter may comprise any known polymer with the required mechanical performance and rigidity which is used in the art, for example, polyamide, thermoplastic polyurethane, polycarbonate or similar," *id.*, 5:21-25. Materials like polyamide, thermoplastic polyurethane, and

[1] The "last" is a foot-shaped object over which the upper is shaped, so that it conforms to the prescribed shape and size of the footwear. *See* EX1017, p.13. Once an upper has been shaped on the last, it is referred to as a "lasted" upper.

polycarbonate were frequently used in construction of heel counters before 2019, as their high levels of rigidity and tensile strength provide structural support to the heel region, resist collapse or flexure of the heel, and promote stability. *See*, *e.g.*, *id.*; EX1028 at 4:35-47 ("Counter 50 is preferably formed of a semirigid to rigid thermoplastic rubber (TPR)…. Exemplary substances include natural crude rubber, polyvinyl chloride, nylons, linear polyethylene, polyurethane prepolymer, polystyrene, polypropylene, and cellulosic and acrylic polymers."); EX1029 at 2:53-58 ("[T]he counter may be formed of a plastic body to provide a stiff, relatively unyielding support in the region of the heel, thereby to restrict movement at least within that region to a normal range of movement. The body may be formed from various plastics, such as polyethylene, polyurethane and polystyrene or the equivalent."); EX1007, ¶¶61-62 ("[T]hermoplastic polyurethane (TPU), polyamide elastomer (PAE) and an ABS resin can be used."); EX1009, ¶43 ("Some examples of materials that can be used to form the internal structural support members include, without limitation, polyurethanes, polyolefins, polyamides (e.g., nylon), ethylene vinyl acetate (EVA), etc.").

21. Similarly, Japanese Utility Model 3212460 ("Takahashi") has a heel counter that "is made of a relatively hard resin material formed by using a (compressed) leather as a base material and spraying a resin powder material onto it. Note that for the resin material or the resin powder material, a thermoplastic resin

such as a thermoplastic polyurethane (TPU), polyamide elastomer (PAE) and an ABS resin can be used." EX1007, ¶¶61-62. TPU and polyamide are discussed above, and ABS (Acrylonitrile Butadiene Styrene) is a similar thermoplastic material with high rigidity and strength. Use of such materials was well-established and routine in the footwear industry before 2019, and it was common knowledge that they provided rigidity to the heel counter so that it would resist collapse or deformation.

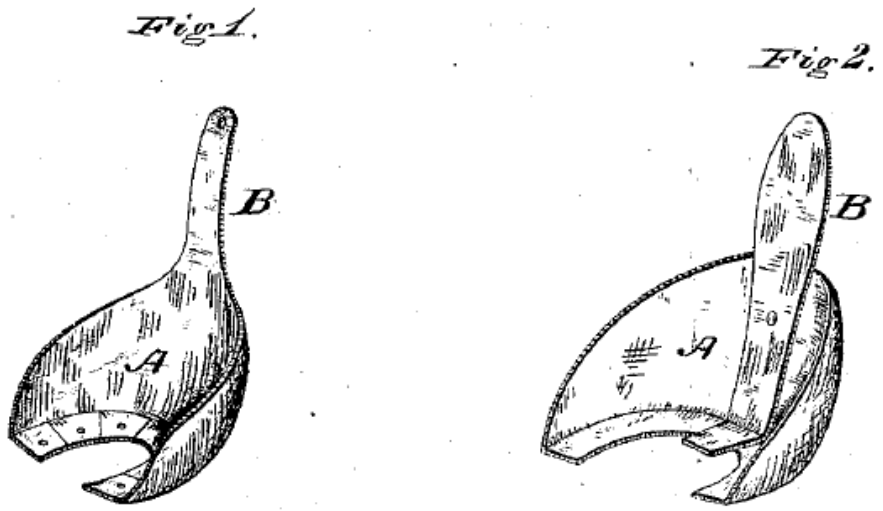
B. Heel Counter Positioning and Securement

22. Heel counters can be secured in footwear in a variety of different ways. Two common methods used before 2019 were internal construction and external construction. An internal heel counter is placed between the rear inner lining of the footwear and the external upper materials, such as by inserting it into a pocket formed between them, and an external heel counter is attached on the outside of the footwear.

23. Before 2019, it was commonplace for internal and external heel counters to include an inwardly-extending portion, or a "flange," at the bottom of the counter that would extend underneath a portion of the upper, such as by extending underneath the insole or underneath the strobel.[2] For example, U.S. Patent

[2] A strobel is a piece of fabric that is connected to the bottom of the upper. Generally, once the shoe's upper and strobel are stitched together, they are then attached onto the sole.

No. 201,796, which issued in 1878, provided a "counter stiffener" with such a flange. EX1020, Figs. 1, 2.



24. Similarly, U.S. Patent No. 5,189,814, which issued in 1993, described a rigid, internal heel counter with an "inwardly extending, U-shaped bottom flange **54**." EX1028, 4:25-26. "The upper surface of the flange **54** engages the bottom surface of the insole **30**," which the patent explains "advantageously supports the entire heel area" of the footwear. *Id.*, 4:30-34, Fig. 4.

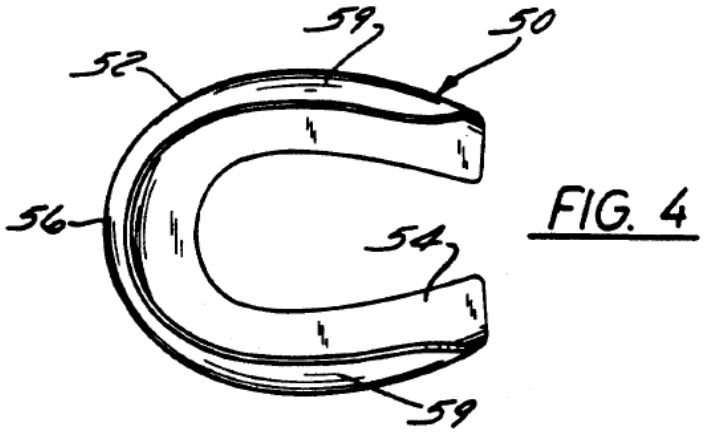
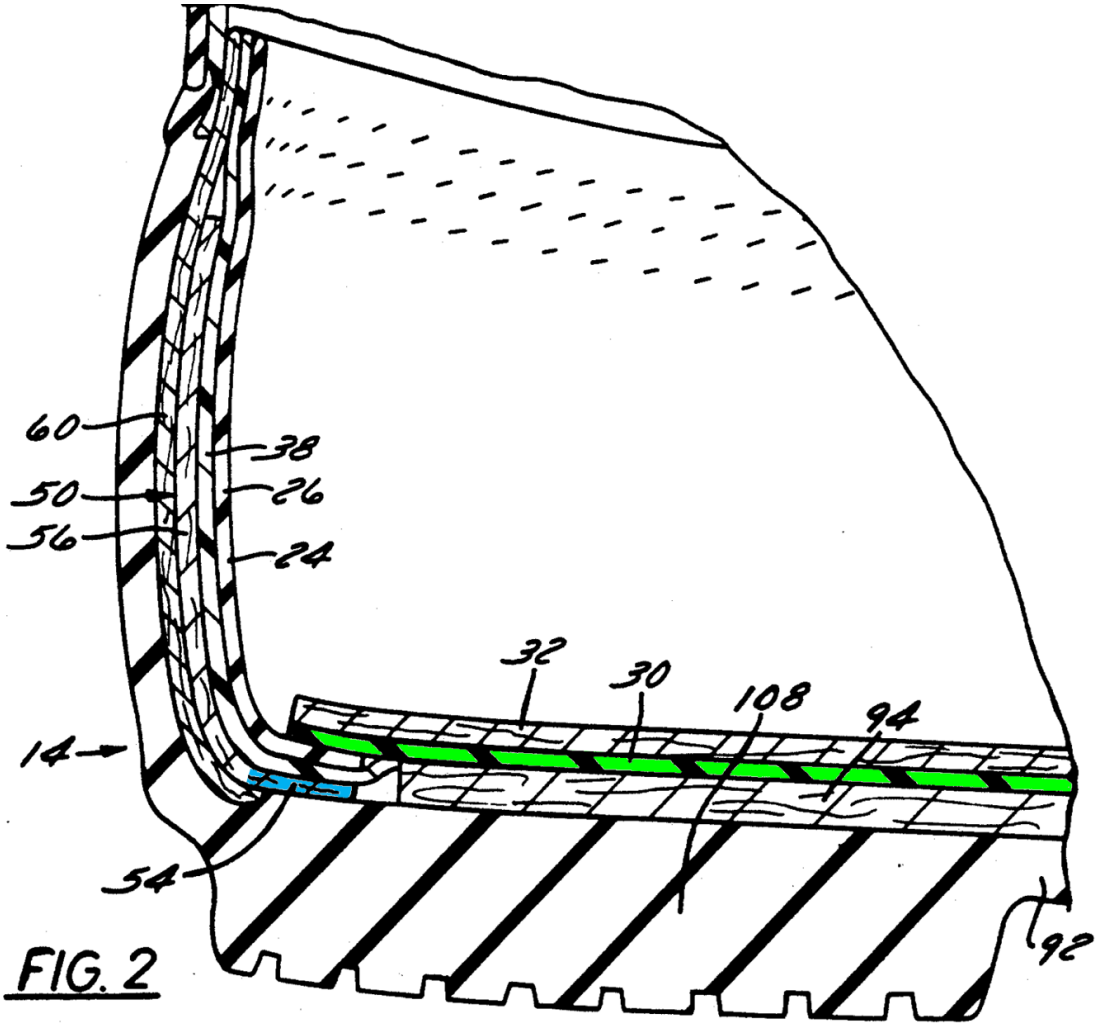


FIG. 4

25. In Figure 2, EX1028 provides a side cross-sectional view of the counter when incorporated into an article of footwear. As can be seen below, the flange **54**, highlighted in blue, extends underneath the insole **30**, highlighted green:



26. One of the shoes that I was personally involved in developing, the adidas Ultra Boost, also included a heel counter with an inward-extending flange that was integrated directly within the midsole. The adidas Ultra Boost used an external heel counter, as shown below:

27. Another shoe with an external heel counter that extends underneath the upper is described in U.S. Patent No. 4,287,675, which describes a counter "formed of a stiff, relatively unyielding material." EX1029, Abstract. As shown in the patent's figures below, the counter has a "base **20**," and "the upper surface of the base provides a mounting surface for the lasted upper **16**." *Id.*, 2:27-35, Figs. 1, 3.

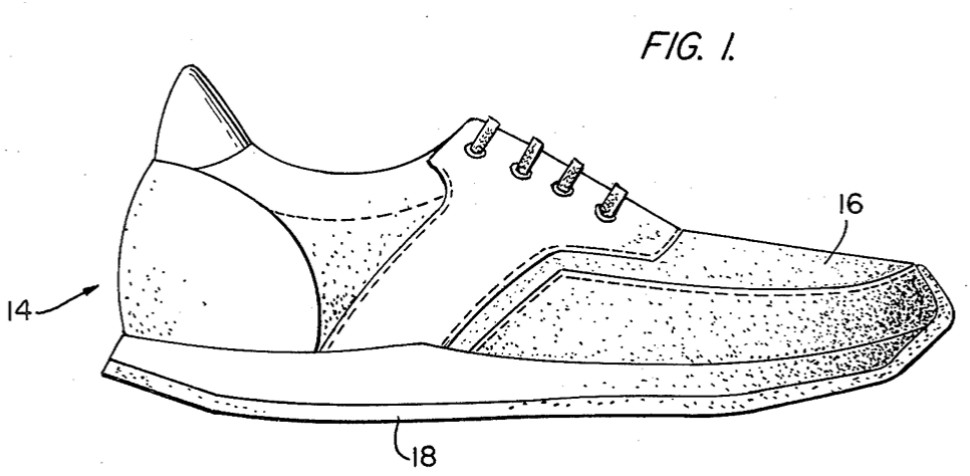
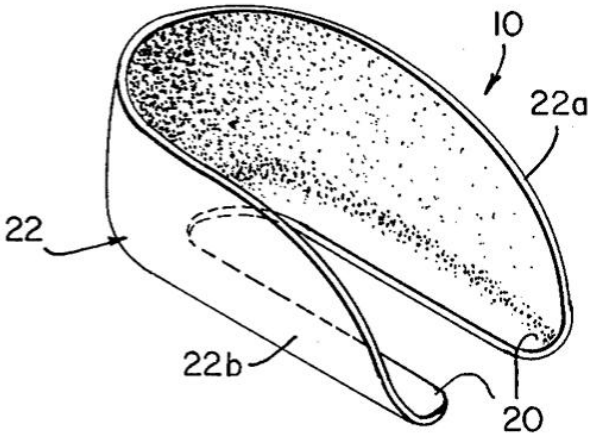
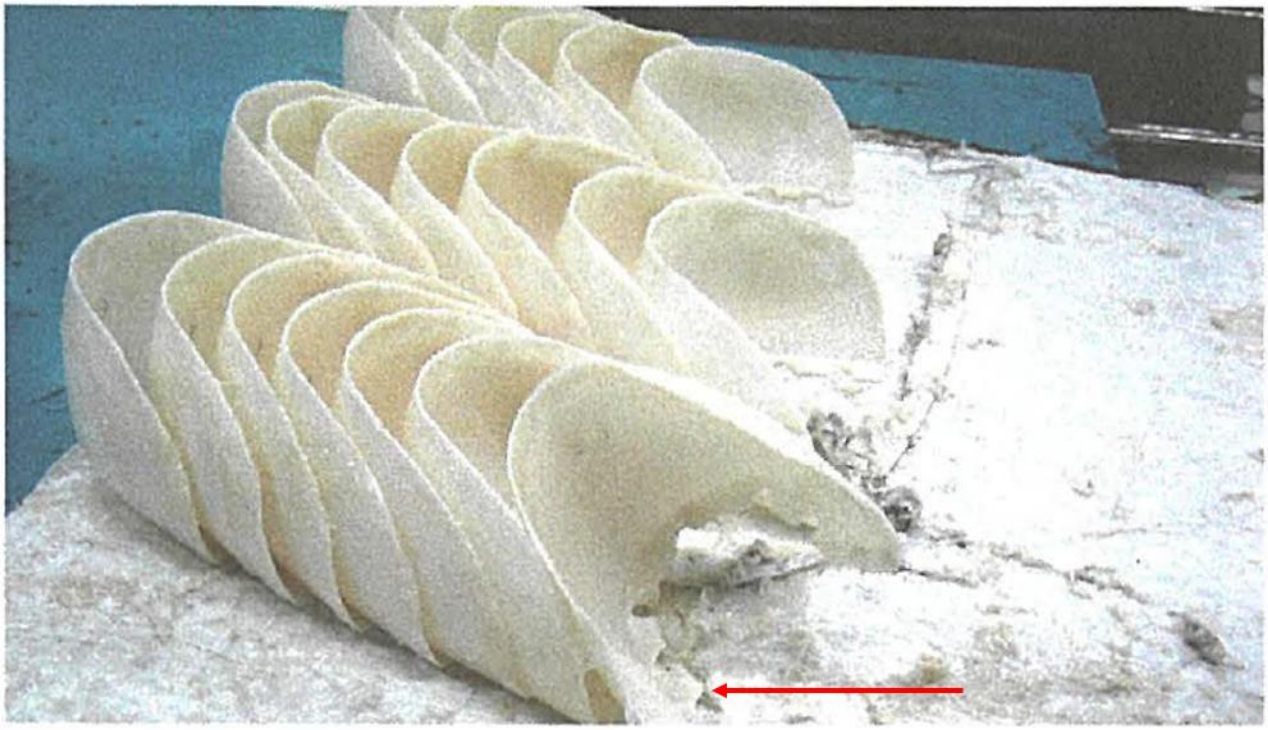


FIG. 3.

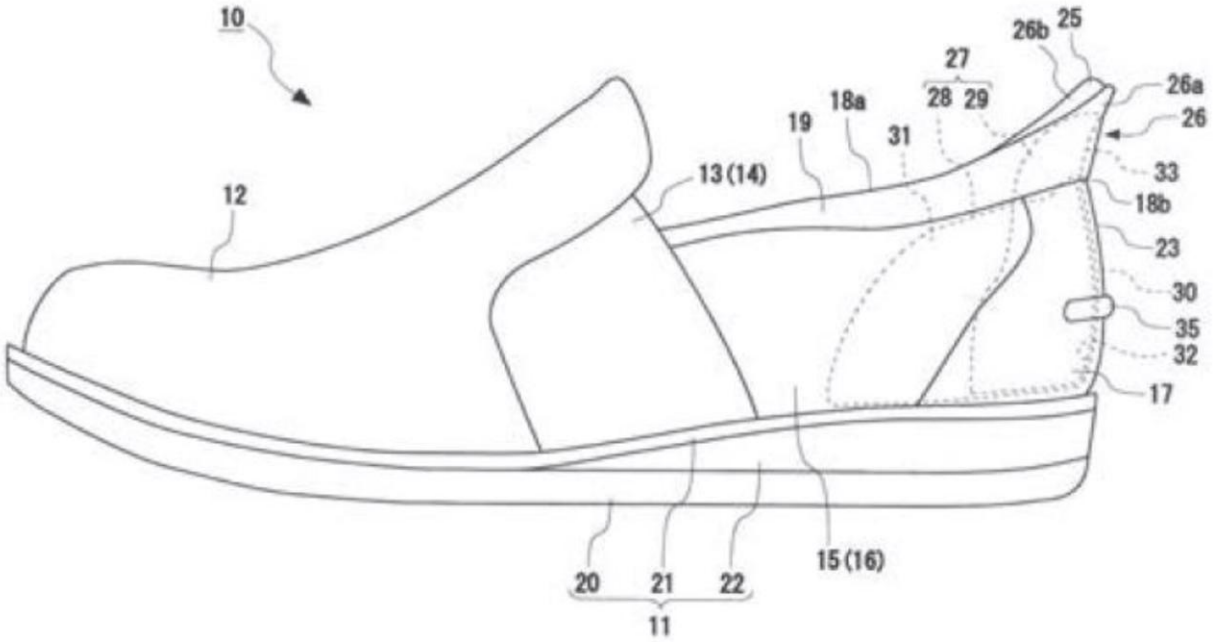


28. Similarly, the Shoe Material Design Guide provides examples of injection molded heel counters with such flanges, indicated by the red arrow below. EX1038, 11.



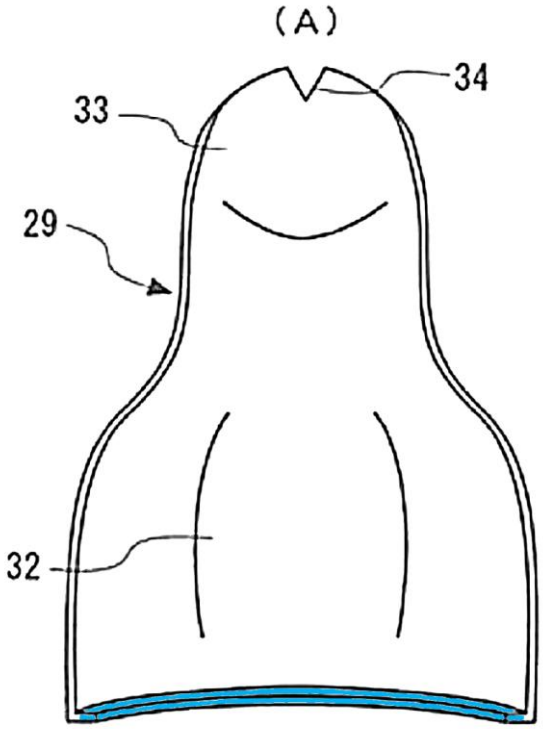
29. Takahashi has an internal heel counter, which "is disposed between the heel portion" and "the lining" of the footwear. EX1007, ¶59. In particular, Takahashi explains that as "shown by the dashed line in FIG. 1, a counter 27 is disposed between the heel portion 17 and the lining 25." *Id.*

[FIG. 1]



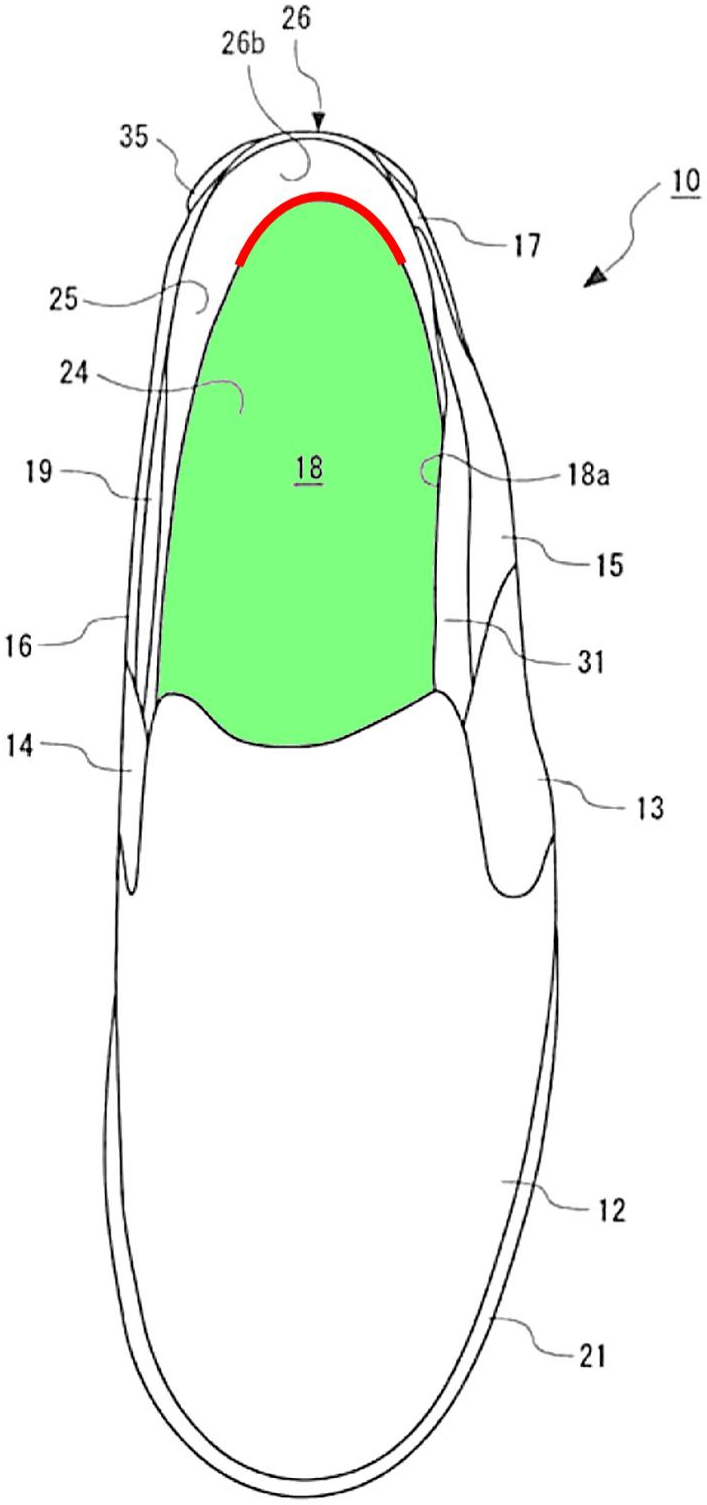
30. Takahashi's counter also has a flange, as shown in Figure 4. The flange is positioned on the bottom of the counter and extends inward, as shown by the blue highlighting below:

[FIG. 4]



31. Similar to the heel counters discussed above, this flange would sit underneath the insole of Takahashi's shoe. Figure 2 of Takahashi, which is a top-down view, shows the insole 24 as indicated by green highlighting below. Moreover, the added red line below shows where the flange depicted above would sit underneath the insole 24:

[FIG. 2]



C. Foam Footwear Components

32. Prior to 2019, it was commonplace for footwear to include foam padding or cushioning elements in various locations. Foam can include "[a]ny of various resins in sponge or cellular form with an open or closed cellular pattern." EX1017, p.10. In general, "[s]ofter foams, such as polyurethanes are used for shoe cushioning, while denser foams are used for midsoles and outsoles to provide resilience and shock absorption." *Id.* For example, the Complete Footwear Dictionary provides a number of examples of commonly used foams such as foam rubber, which is a "[s]pongy rubber made from latex by whipping or foaming the rubber before the vulcanization process," *id.*, and "urethane," which can be "chemically manipulated to become urethane foam for shoe cushioning," *id*., p.20.

33. Given the ubiquity of foam usage in footwear, the Shoe Material Design Guide has an entire chapter devoted to it, explaining that foam "can provide comfort, structure, cushioning, and can help define the styling of your shoe's design." EX1038, 15. The Guide provides numerous examples of types of foam regularly used in footwear prior to 2019, including EVA (ethyl vinyl acetate), polyurethane, polyethylene, PVC (PolyVinyl chloride) sponge foam, latex rubber foam, neoprene rubber foam, and SBR (styrene butadiene rubber) foam. *Id.*, 18.

34. Before 2019, it was a standard practice in the footwear industry to include foam heel padding for improved fit and to help prevent heel slippage. For

example, adidas had a molded heel foam padding technology called GeoFit, which it marketed as an adidas technology from 2005 to 2015. EX1034 is a 2013 review of an adidas shoe called the Busenitz ADV from weartested.com, which includes a cross-section of the Busenitz ADV showing the foam padding at the heel. EX1034, p.5. The review explains, "the 'geofit'-technology creates a snug fit around the heel without impairing the movement of the ankle." *Id*., p.7.

35. There are also large, publicly available archives of similar cut shoes, which are commonly used as a resource in the industry when reviewing shoe constructions of different models. https://weartesters.com/tag/deconstructed/, for example, has numerous examples of cut shoes showing foam padding oriented concave towards their soles. EX1035, a 2017 deconstruction of the Nike Kyrie 4, is one example. EX1035, p.5.

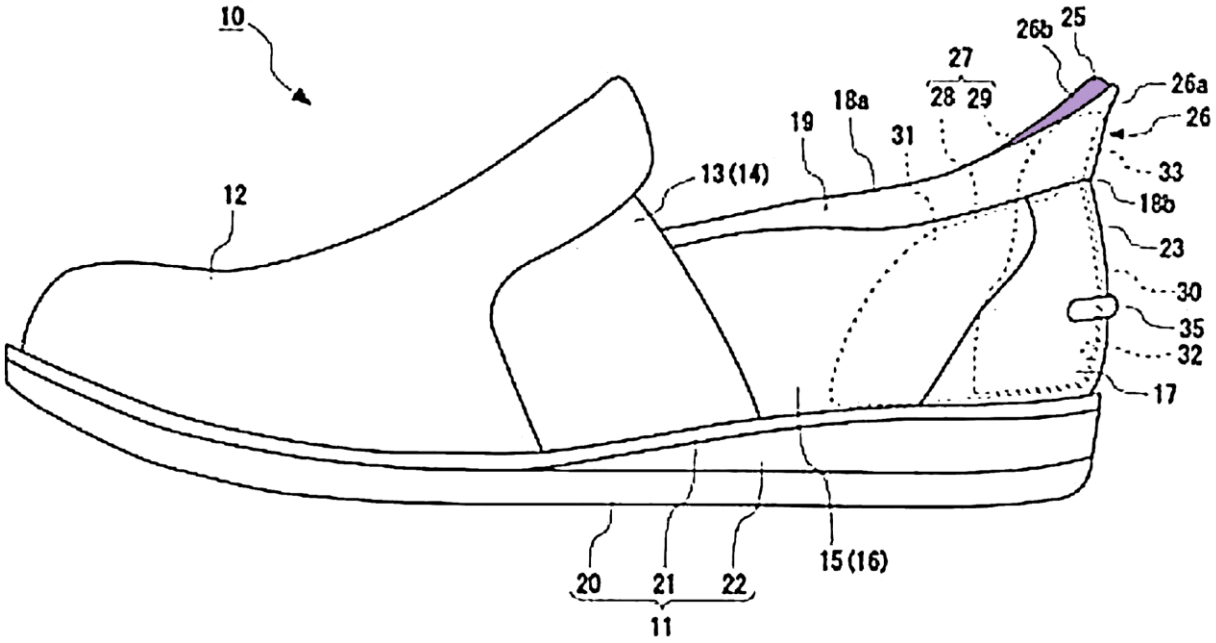
36. In both the Busenitz ADV and the Kyrie 4, the foam cushioning is positioned between the inner lining of the footwear and the heel counter and wraps around the heel and collar of the shoe, as shown by the zoomed-in images below.

37. In footwear constructions such as these, the foam material is often attached to the heel counter through the use of a contact adhesive.

38. In a similar vein, U.S. Patent No. 12,029,276 ("Shin") includes a deformable "elastic member 122" that is coupled to a support member at the heel region and can be "made of a rubber material" or "a highly elastic material such as urethane having elasticity." EX1010, 5:34-37. In this context, "rubber material" or "urethane having elasticity" would include rubber and urethane foams, such as polyurethane, neoprene rubber, latex rubber, and SBR foam, which as noted above were generally known and frequently used in footwear construction before 2019.

39. Similarly, Takahashi includes a includes a "lining (covering for inside surface) 25" on the "inner surfaces of the sides 15, 16 and the heel portion 17" of the upper. EX1007, ¶54. The lining has "an appropriate cushioning property," and includes "two or more layers of cloth (inner surface skin)" and a "cushion body (e.g., sponge) or the like" provided inside the lining. *Id*. This sponge "cushion body" refers to a type of foam lining. As discussed above, foams frequently used for footwear cushioning long before 2019 included "various resins in sponge or cellular form," such as polyurethane. EX1017, p.10. For example, the Complete Footwear Dictionary explains that "artificial sponge—for many years used as a shoe cushioning material—consists of foam-type rubber filled with air pockets." *Id.*, p.16. Takahashi's Figure 1 illustrates a side view with the lining 25 visible, as shown in purple highlighting:

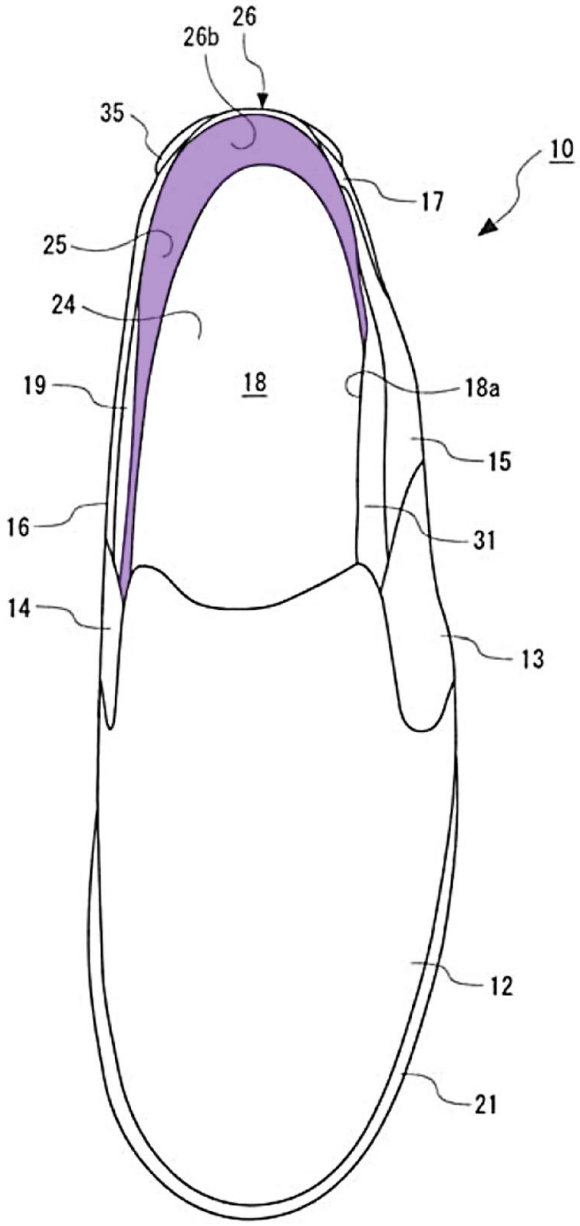
[FIG. 1]



40. Moreover, Takahashi explains that its "heel counter 27 is disposed between the heel portion 17 and the lining 25." EX1007, ¶59. This is similar in principle to the Busenitz ADV and Kyrie 4, which have the foam lining coupled to the heel counter and surrounded by the inside lining of the shoe. In this case, Takahashi explains that the "inner surfaces of the sides 15, 16 and the heel portion 17 are provided with [the] lining (covering for inside surface) 25." *Id.*, ¶54. In other words, the lining and sponge cushioning cover the entire inside surface of the shoe, not just the visible portion highlighted purple in Figure 1 above. Instead, the lining and sponge cushioning would extend down along the inside of the heel portion, and wrap around to both the medial and lateral sides of the shoe. Moreover, at the heel portion 17, the lining and sponge cushioning are attached to the counter 27, which

as mentioned above is "disposed between the heel portion 17 and the lining 25." EX1007, ¶59. Takahashi's Figure 2 shows a top-down view that helps illustrate this configuration:

[FIG. 2]

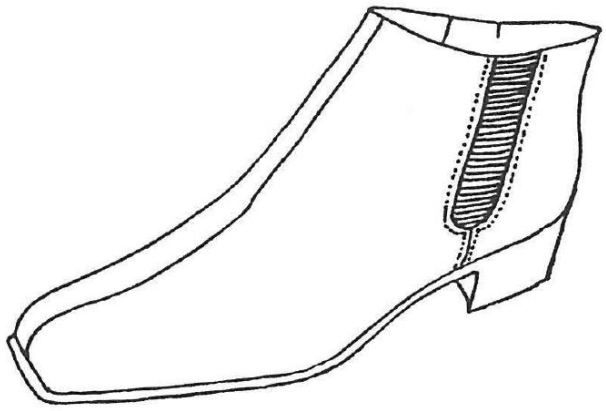


41. Takahashi's sponge cushioning material would function like the foamed cushioning components discussed above for the Busenitz ADV, the Kyrie 4,

and Shin—providing a snug fit around the heel, holding the heel in place and providing comfort to the Achilles tendon, among other parts of the foot.

D. Elastic Footwear Components

42. Inclusion of elastic components in footwear has been commonplace for well over a hundred years. For example, the Complete Footwear Dictionary explains that the pump—a slip on style of footwear—became popular in the mid-nineteenth century due to "the invention of elasticized goring in 1837 by J. Sparkes Hall, bootmaker to Queen Victoria." EX1017, p.21. Hall's *Book of the Feet: A History of Boots and Shoes*, from 1847, includes a discussion of his invention of these gorings, and their use in elastic boots that that are easy to put on and take off. EX1019, 126-27, 136-37. The Complete Footwear Dictionary also provides further examples of gorings, which are made of "fabric woven with rubber threads to form an elastic material," such as those commonly included in the contemporary Chelsea boot. EX1017, p.11.

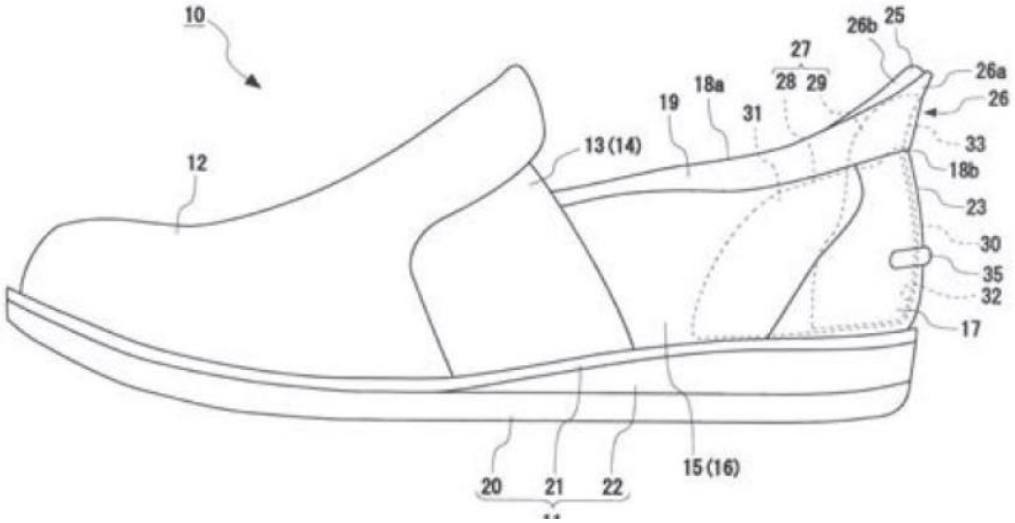


Side goring.

43. Elastic components, such as gorings, can be an alternative or supplement to other fastening features like shoelaces. For example, the Shoe Material Design Guide's chapter on shoelaces provides examples of "other ways to secure a shoe to your foot," including "elastic goring." EX1038, 13-14. When a user dons footwear with gorings, the upper will deform in response to the foot entering the footwear, allowing the foot opening to widen as the elastic components stretch. The elastic force created by these components—their natural tendency to return to their original shape—contracts the foot opening and functions to secure the foot in the footwear. For example, in the side goring shown by the Complete Footwear Dictionary, the gore would widen the foot opening in response to a user's foot being inserted.

44. Similarly, Takahashi's footwear has two "stretchable portions 13, 14" that "allow the deformation of the upper 12" when the user dons or doffs the footwear. EX1007, ¶37, Fig. 1. According to Takahashi, these stretchable portions can "be made of, for example, a stretchable cloth or rubber sheet of a similar color to the upper 12." *Id.*, ¶45. Like the gores discussed above, Takahashi's stretchable portions function to expand the opening of the footwear as a foot enters the footwear, and their elastic force would contract the opening and enhance the securement of the foot in the footwear. In this case, the upper of Takahashi's footwear would flex forward and upward as the foot is inserted.

[FIG. 1]



I, Angus Wardlaw, do hereby declare and state that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: May 27, 2026

Angus Wardlaw

Appendix A

Angus Nimlin Wardlaw

Edinburgh, UK +44 7470 995058 anguswardlaw@me.com LinkedIn: angus-wardlaw-25b53421

Professional Summary

Global sportswear executive with 20+ years of leadership experience in innovation, product development, and operational transformation across footwear and apparel. Achieved industry-leading results, including the launch of Adidas Ultraboost ($2B+ in revenue), and developed ANTA's innovation centre, integrating sustainability into every phase of the product lifecycle. With 8+ years leading teams in China and Asia, excels in navigating complex markets, building global R&D networks, and delivering solutions that drive performance and growth for international brands.

Key Achievements

- Spearheaded the creation of the Adidas Ultraboost, achieving over 30 million pairs sold and generating revenue exceeding $2B USD.
- Built ANTA Group's first cross-functional innovation centre, integrating advanced R&D capabilities for both footwear and apparel.
- Acted as lead industry expert for the development of a novel 3D design software now used in the footwear industry for live customisation during sales meetings with major global retailers.
- Reconstructed FILA's footwear development and testing program, laying the foundation for premium performance and lifestyle product launches.

Career Experience

Nimlin Sports Limited, Hong Kong / Scotland
FOUNDER & PRINCIPAL CONSULTANT
December 2024 – Present

- Independent consulting practice supporting global sportswear and outdoor brands with strategy, product creation, sourcing, testing, and operations.
- Delivered strategic R&D, calendar, and manufacturing systems support for brands including Lululemon
- Supported Asia-based sourcing transitions, digital tooling strategy, and innovation pipeline planning for multiple clients.

Smoothlink Manufacturing, Hong Kong SAR
FOOTWEAR DIRECTOR
Apr 2025 - Present

- Design, Development & Manufacturing support for performance sportswear and fashion brands.
- Covering all major sports from Road Running, Trail, Mountain, Fishing, Golf, Football, Court, Outdoor and Lifestyle.

Fila USA, NYC, USA
VICE PRESIDENT – Footwear Operations
October 2023 – November 2024

- Revitalised Fila's footwear operations by rebuilding product creation and testing processes, enabling consistent delivery of premium-quality performance and lifestyle footwear.
- Optimised the product calendar and streamlined SKUs from 2,000 to 450, achieving efficiency and profitability.
- Established a Vietnam-based supply chain network, reducing dependency on China and cutting production lead times.
- Developed a flagship running shoe and integrated advanced technology, outperforming industry leaders in consumer tests.

Revobit, Berlin, Germany
VICE PRESIDENT – Global Business Development
January 2021 – October 2023

- Led the SME team in R&D, commercialisation, sourcing, and business strategy, driving the development of a digital platform for footwear and apparel innovation.
- Successfully expanded EU operations, enhancing client adoption of 3D design tools for live sales customisation with major retailers.

ANTA Sports Limited, Xiamen, China
HEAD OF INNOVATION – Footwear and Apparel
January 2018 – January 2021

- Built ANTA's first cross-category innovation roadmap, driving advancements in performance, sustainability, smart products, and speed-to-market.
- Established a world-class innovation centre, including state-of-the-art labs for sports science, mechanical engineering, and 3D printing.
- Recruited and managed a 35-member team of global experts across disciplines, delivering multiple consumer-driven innovations.

Adidas AG, Herzogenaurach, Germany
DIRECTOR - FUTURE Innovation Team
October 2014 – June 2017

- Directed the innovation process for the Ultraboost franchise, generating $2B+ in sales and defining the premium running category.
- Led the cross-functional development of groundbreaking products, including Pureboost X and Futurecraft AM4.

SENIOR DEVELOPMENT ENGINEER II – FUTURE Innovation Team
May 2011 – September 2014

- Oversaw product innovation and manufacturing advancements, contributing to the launch of Boost technology with over 100 million pairs sold.
- Developed Energy Boost, a flagship product generating $72M in its first year, representing an 80% increase over prior models.

CATEGORY LEADER – Golf Footwear (Guangzhou, China)
2009 – 2011

DEVELOPMENT MANAGER – Running Footwear (China & Germany)
2007 – 2009 (Guangzhou, China)
2004 – 2007 (Herzogenaurach, Germany)

MECHANICAL ENGINEER – adidas Innovation Team (Herzogenaurach, Germany)
2003 – 2004

Patents

Co-inventor on **20+ patents** covering footwear materials, footwear technology, and advanced manufacturing.

Full details available at https://patents.google.com/?inventor=angus+wardlaw

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Education and Certifications

B.Eng. Mechanical Engineering with Management Techniques 2:1
The University of Edinburgh, Edinburgh, Scotland

Technical Skills

- **Product Development:** Agile methodologies, R&D management, 3D software integration.
- **Strategic Operations:** Supply chain optimisation, cross-category innovation leadership.
- **Languages:** Basic Mandarin (Pinyin), Moderate German.
- **Software:** Advanced CAD (Rhino Surface Modeler), 3D digital creation platforms.

Sporting Achievements

Represented Scotland in international running competitions, including the World Mountain Running Championships, demonstrating a lifelong commitment to performance and sport.