

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. 12,121,096

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

**DECLARATION OF ANGUS WARDLAW
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 12,121,096**

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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. 12,121,096, including the exhibits I understand will be submitted with the Petition (namely, EX1001 to EX1038). 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 '096 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 '096 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, Positioning, and Securement

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 last¹ by pressure.” EX1021, p.5-6.

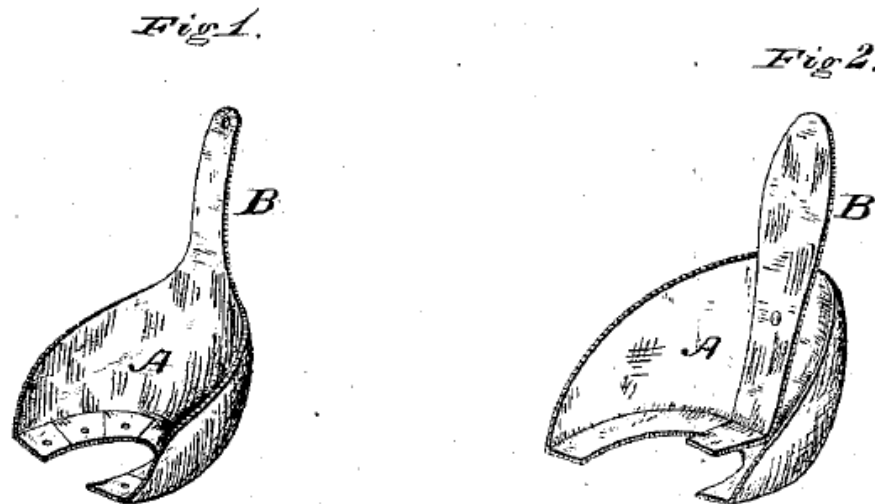
19. For example, the ’700 Patent, of which I am a co-inventor, discusses footwear that includes a “heel counter arranged in the heel portion” and “comprises a lateral portion and a medial portion for supporting the heel of a wearer’s foot.” EX1036, 1:66-2:1.

20. 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.

21. 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

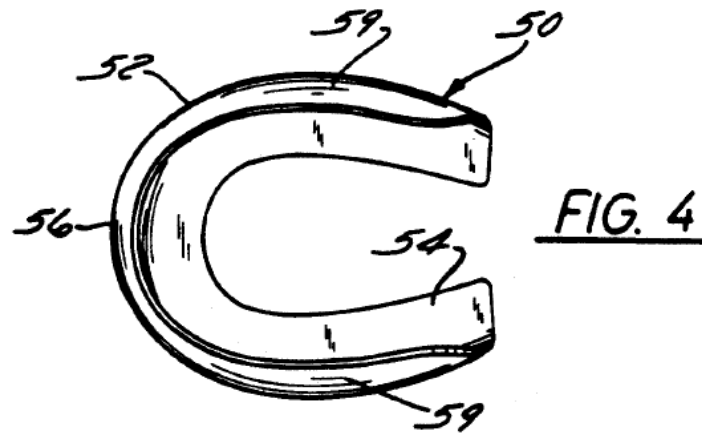
¹ The “last” is a foot-shaped object over which the upper is shaped, so that it conforms to the prescribed shape and size of the footwear. See EX1021, p.15. Once an upper has been shaped on the last, it is referred to as a “lasted” upper.

extending underneath the insole or underneath the strob². For example, U.S. Patent No. 201,796, which issued in 1878, provided a “counter stiffener” with such a flange. EX1025, Figs. 1, 2.

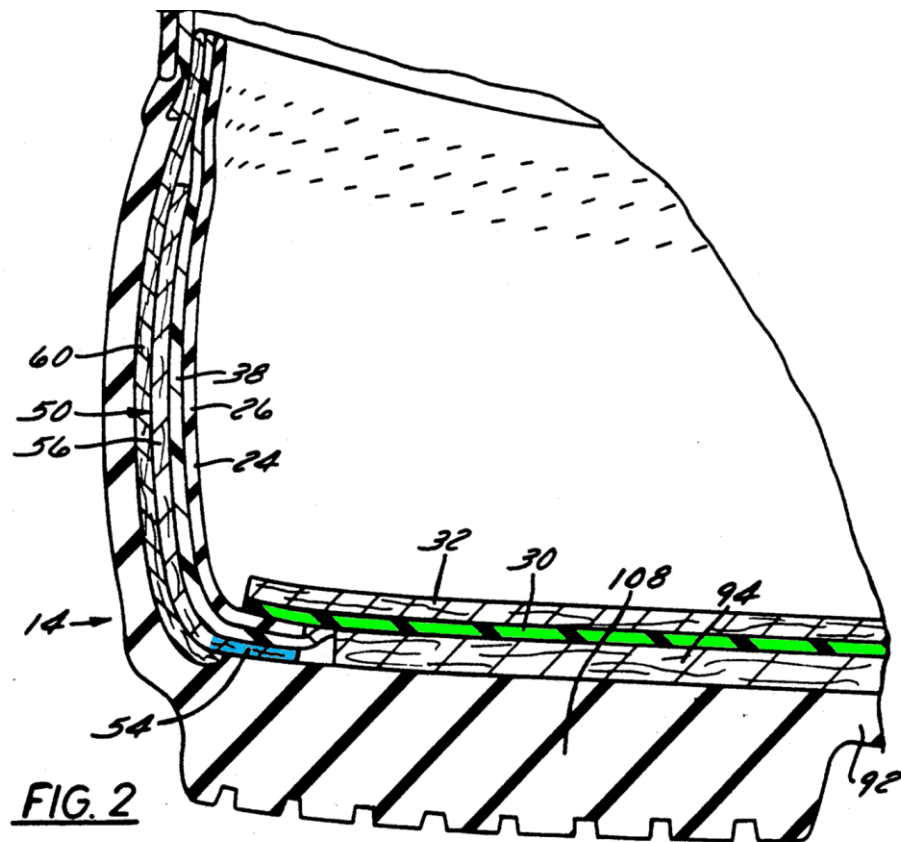


22. Similarly, U.S. Patent No. 5,189,814, which issued in 1993, described an internal heel counter with an “inwardly extending, U-shaped bottom flange 54.” EX1031, 4:25-26. “The upper surface of the flange 54 engages the bottom surface of the insole 30,” which the patent explains “advantageously supports the entire heel area” of the footwear. *Id.*, 4:30-34, Fig. 4.

² A strob² is a piece of fabric that is connected to the bottom of the upper. Generally, once the shoe’s upper and strob² are stitched together, they are then attached onto the sole.



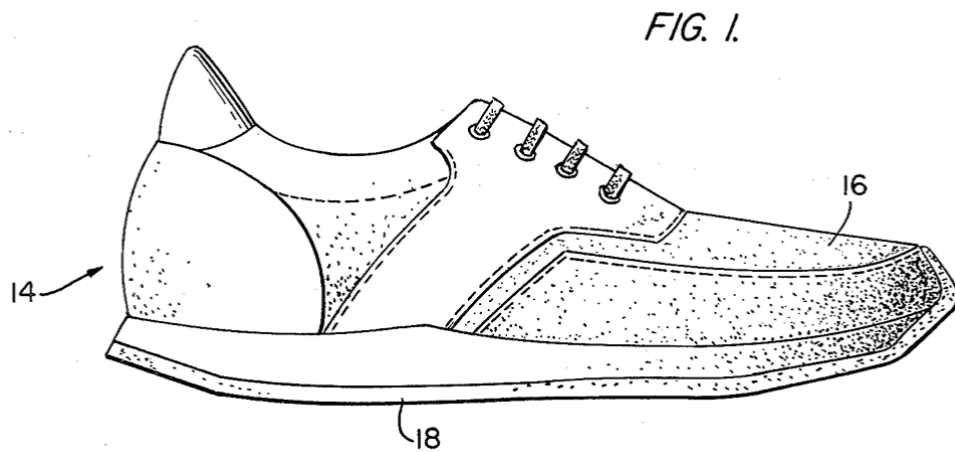
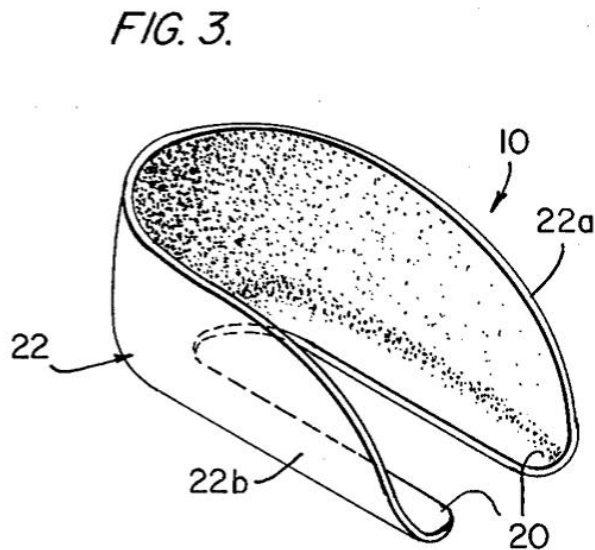
23. In Figure 2, EX1031 provides a side cross-sectional view of the counter when incorporated into an article of footwear. As can be seen below, the flange 54, highlighted in blue, extends underneath the insole 30, highlighted green:



24. 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:



25. 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.” EX1032, 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.



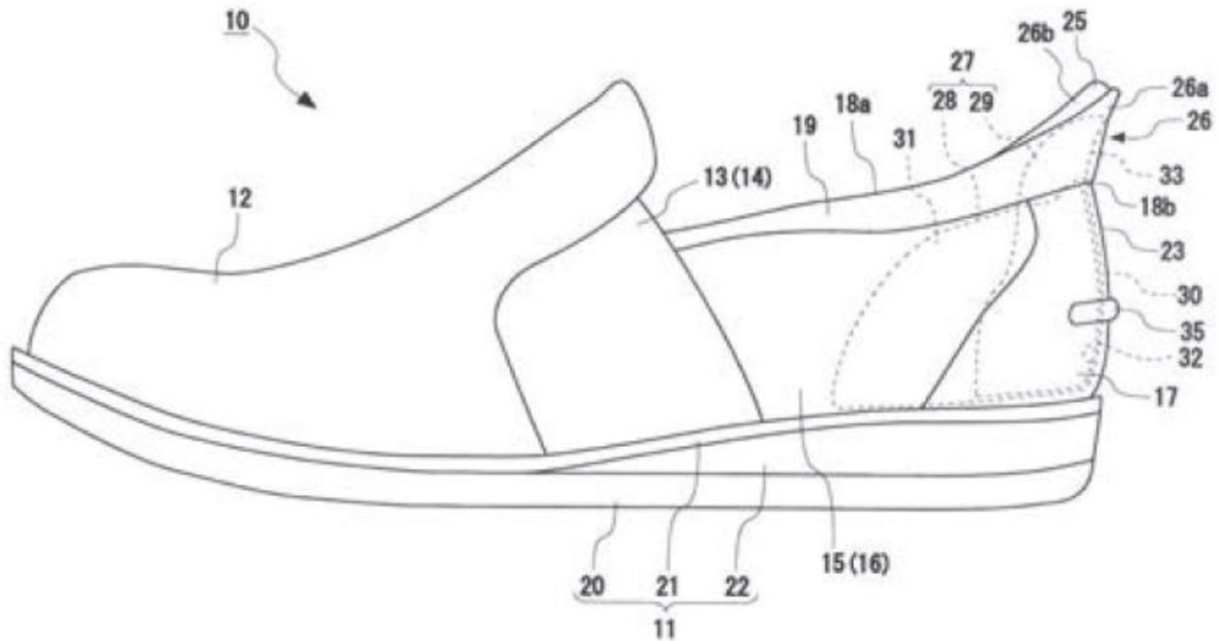
26. Similarly, the Shoe Material Design Guide provides examples of injection molded heel counters with such flanges, indicated by the red arrow below.

EX1038, 11.



27. Similarly, Japanese Utility Model 3212460 (“Takahashi”) has an internal heel counter, which “is disposed between the heel portion” and “the lining” of the footwear. EX1005, ¶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.*

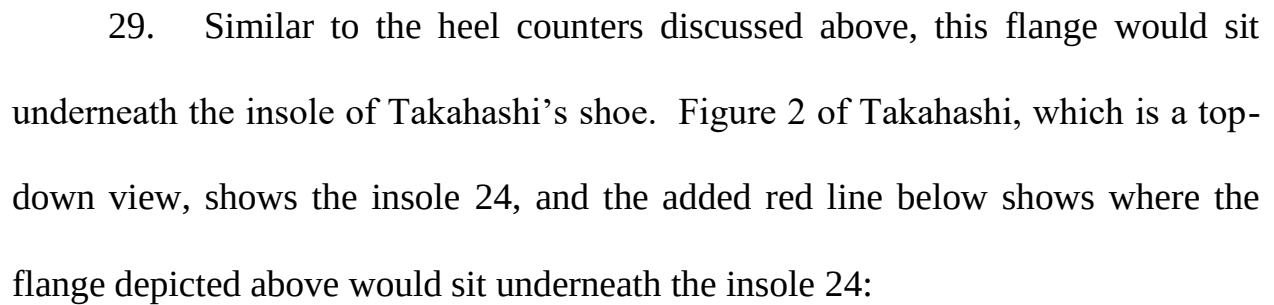
[FIG. 1]



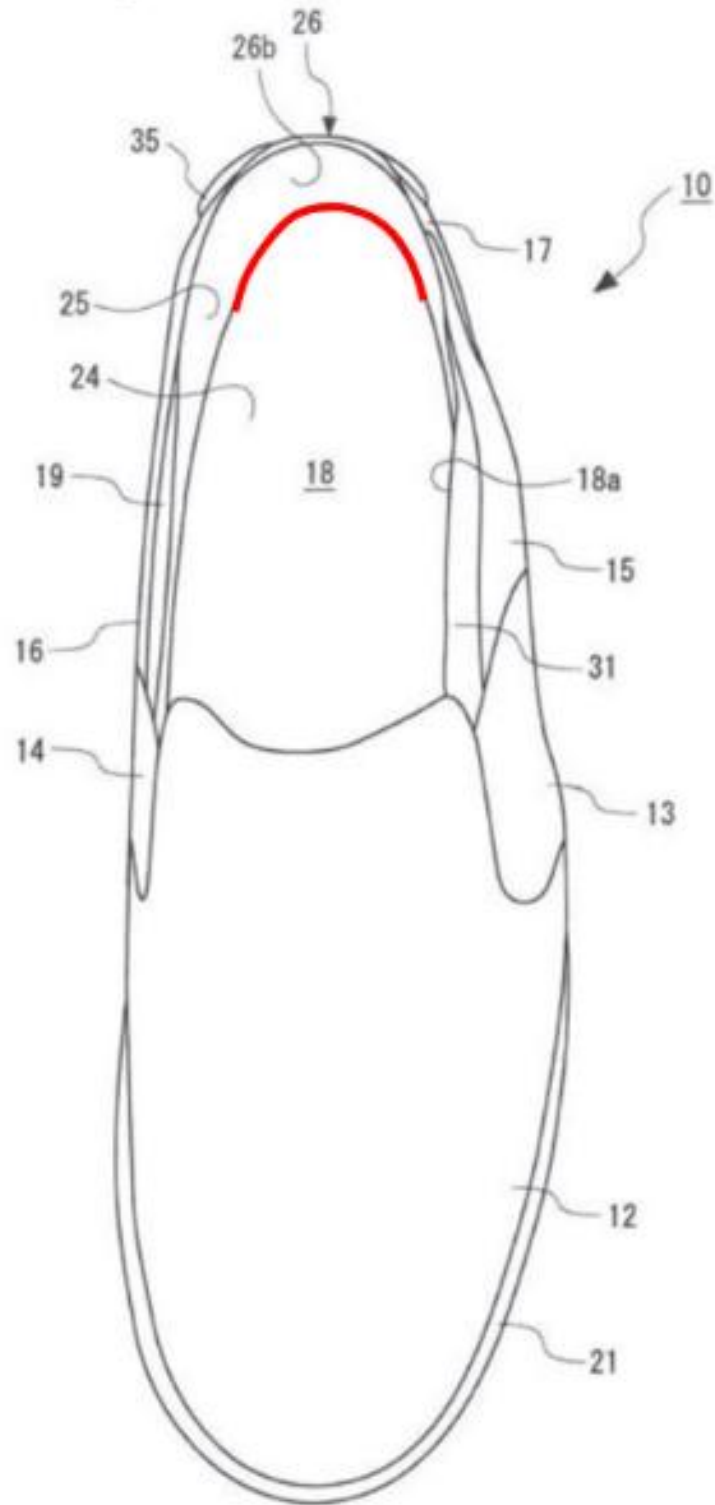
Takahashi, Fig. 1.

28. 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 yellow highlighting below:

Takahashi, Fig. 4 (annotated with color).



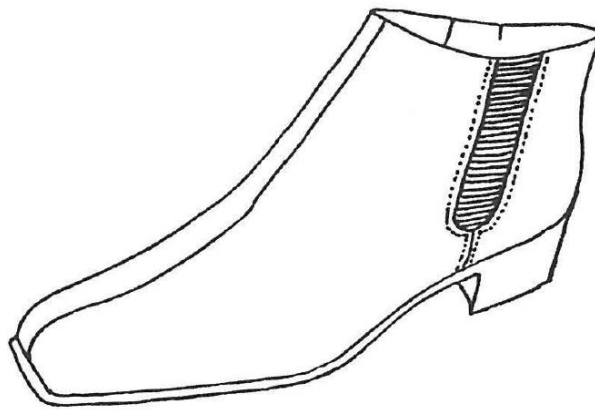
[FIG. 2]



Takahashi, Fig. 2 (annotated with red line).

B. Elastic Footwear Components

30. 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.” EX1021, 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. EX1023, 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. EX1021, p.13.



Side goring.

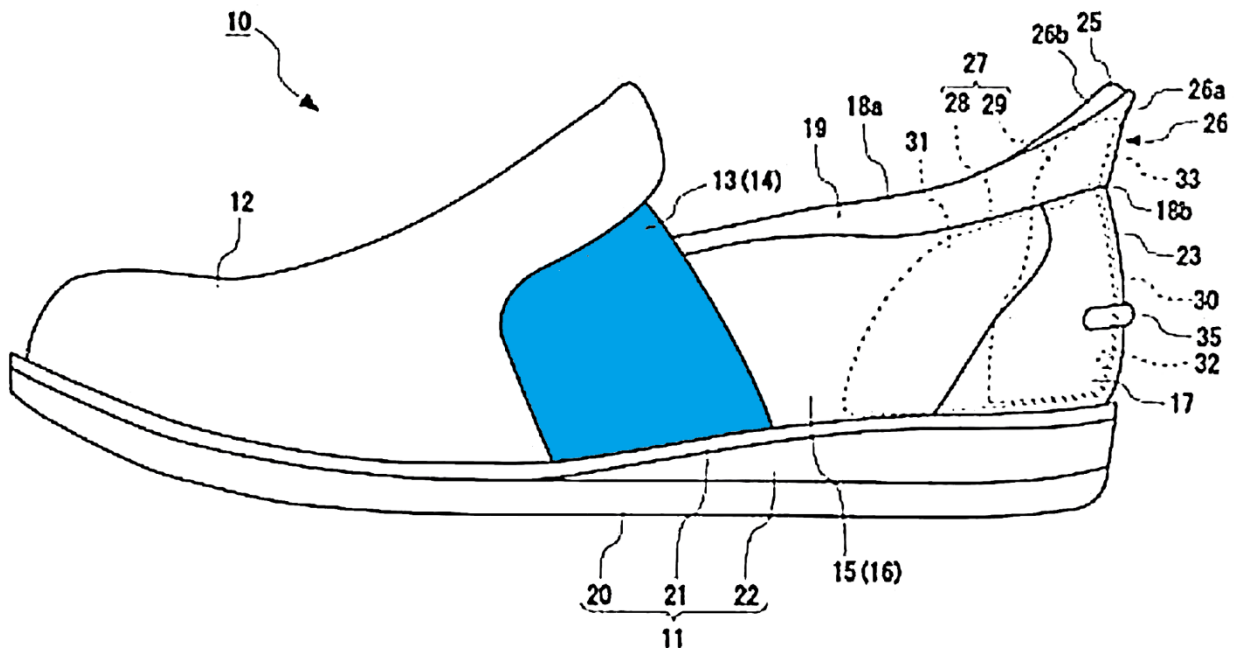
31. In addition to the side goring shown above, the Complete Footwear Dictionary also discusses other forms of gorings, such as the “front” goring, which

is “applied at the shoe’s throat or instep,” and the “hidden” goring, which can be located “over the instep and under the tongue on a loafer shoe.” *Id.*

32. 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.

33. Similarly, Takahashi’s shoe has two “stretchable portions 13, 14” that “allow the deformation of the upper 12” when the user dons or doffs the footwear. EX1005, ¶37, Fig. 1. These stretchable portions are highlighted blue in Figure 1 below:

[FIG. 1]

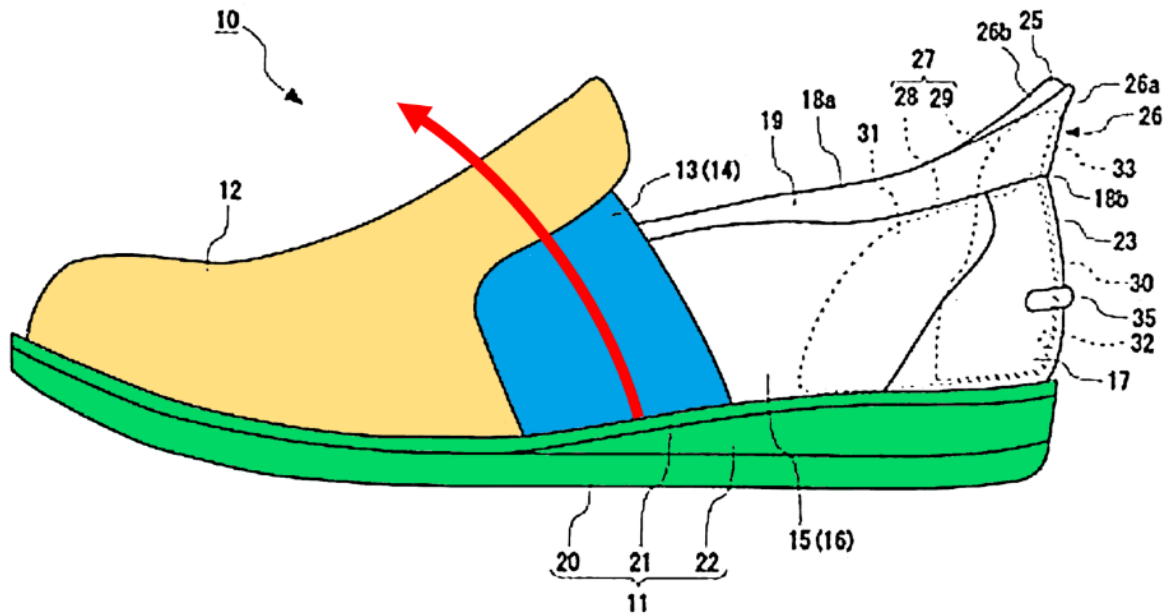


Takahashi, Fig. 1 (annotated with color).

34. According to Takahashi, the 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. *Id.*, ¶37 (“a pair of stretchable portions 13, 14 located on both the left side and the right side to allow the deformation of the upper 12”). In this case, Takahashi’s upper would flex and/or pivot forward and upward as the foot is inserted. For example, this is illustrated in annotated Figure 1 below, in which the

elastic elements (blue) facilitate the forward portion (orange) to flex and/or pivot forward and upward (indicated by red arrow) relative to the sole (green):

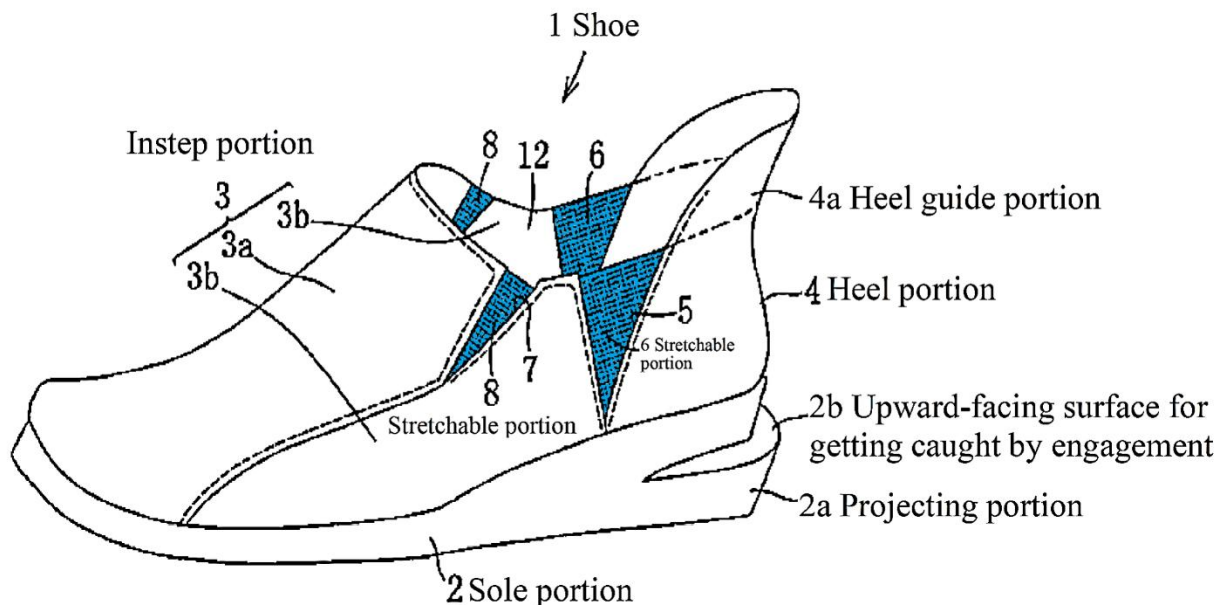
[FIG. 1]



Takahashi, Fig. 1 (annotated with color and arrow).

35. Another shoe that incorporates elastic elements in the upper is Japanese Utility Model 3153220 (“Kim”). In particular, Kim’s shoe has “two pairs of stretchable portions 6, 8 composed of a stretchable woven fabric member at the boundary between the instep portion 3 and the heel portion 4 and in the vicinity thereof.” EX1008, Abstract. This is shown in Kim’s Figure 1, reproduced below, with the stretchable portions highlighted blue.

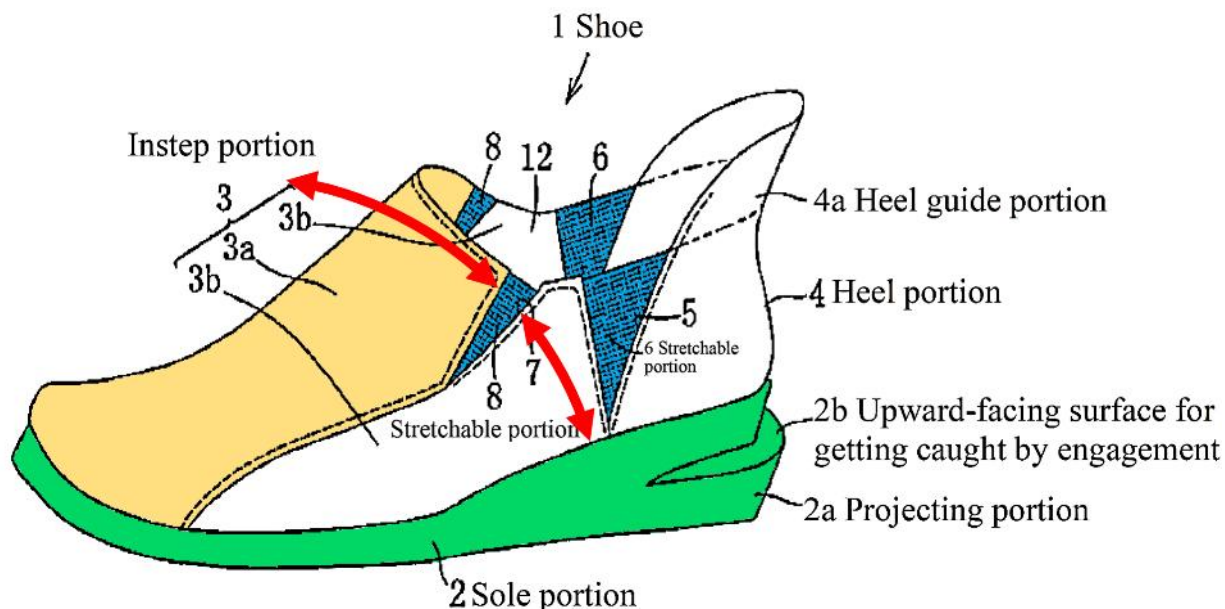
[FIG. 1]



Kim, Fig. 1 (annotated with color).

36. The stretchable portions in Kim’s upper would function similarly to those described above, enabling the upper to flex and/or pivot forward and upward as the user dons the shoe. Kim explains that “[t]he instep portion 3, the two pairs of stretchable portions 6, 8, and the upper end portion of the heel guide portion 4a form a shoe opening 12, and the shoe opening 12 expands when the two pairs of stretchable portions 6, 8 stretches.” EX1008 ¶25. As a result, “the heel can be easily placed inside of the heel portion 4” of the shoe. *Id.*, ¶29. For example, this is illustrated in annotated Figure 1 below, in which the elastic elements (blue) facilitate the forward portion (orange) to flex and/or pivot forward and upward (indicated by red arrows) relative to the sole (green):

[FIG. 1]



Kim, Fig. 1 (annotated with color and arrows).

37. U.S. Patent Application Publication No. 2015/0013189 (“Hanak”) also discusses the use of elastic components in footwear uppers. In particular, Hanak describes various “elastic insertions,” made from materials like “textile rubber,” that can be positioned at multiple locations in the upper. EX1010, ¶¶30-31. Hanak explains that these elastic insertions are provided to reduce “pressure of the upper of the shoe on the instep of the foot” and to “reduce overall toughness of the shoe” on the foot. *Id.*, ¶¶4-7.

38. Hanak provides an example in Figure 11, which includes “instep elastic insertion 411,” “ankle elastic insertion 422,” and “calf elastic insertion 431,” *id.* ¶39, which are highlighted below in blue:

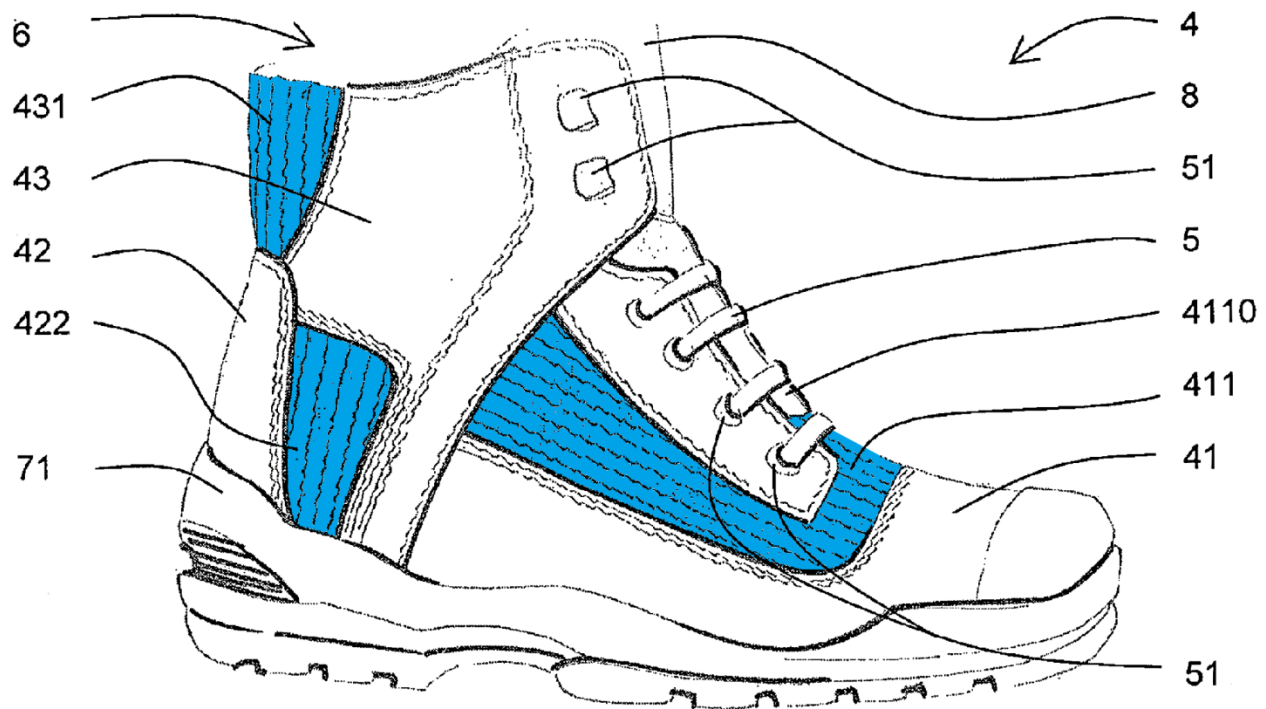


Fig. 11

Hanak, Fig. 11 (annotated with color).

39. Hanak provides another example in Figure 10, which similarly includes “instep elastic insertion 411” and “at least one ... ankle elastic insertion 422,” as well as “auxiliary instep insertion 412 positioned on at least one side of the shoe,” *id.*, ¶38, all of which are highlighted blue below:

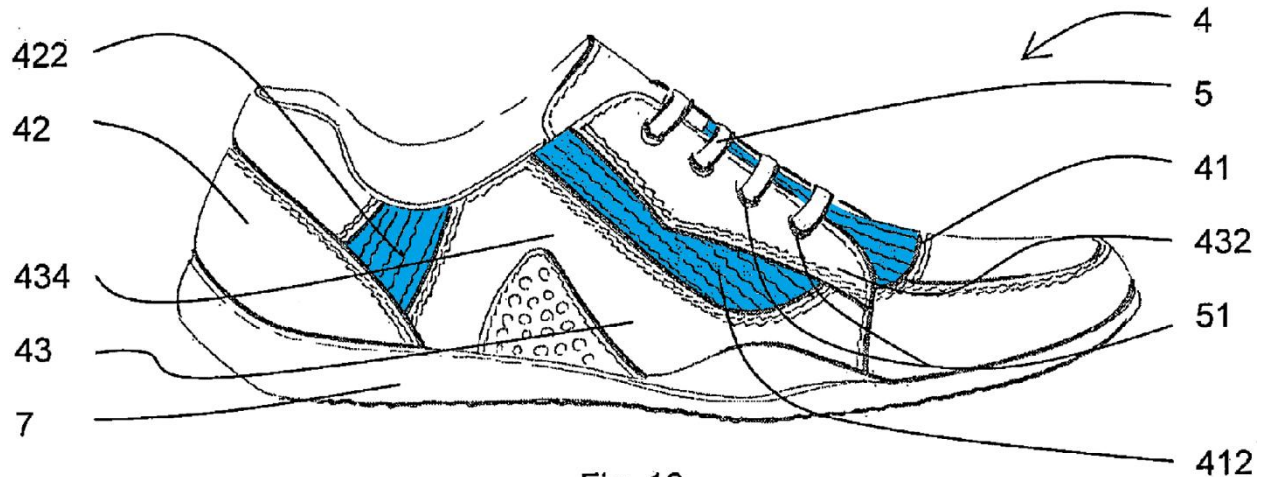


Fig. 10

Hanak, Fig. 10 (annotated with color).

40. It appears that Figure 10 inadvertently omitted the numeral “411” to denote the “instep elastic insertion,” as the paragraph that discusses the Figure 10 example specifically refers to an “approximately rectangular instep elastic insertion 411.” *Id.* However, a POSITA would have understood that the rightmost blue highlighted elastic insertion shown above corresponds to “instep elastic insertion 411,” given that it contains the same ridge lines as the Figure 11 example, is located in the same general instep location on the upper as the instep insertion in Figure 11, and is “approximately rectangular” as discussed in the paragraph describing the Figure 10 example.

41. In any case, the instep elastic insertion in Hanak’s Figure 10 extends across and is coupled to shoe’s tongue portion. In the version of Figure 10 below, the tongue portion is highlighted orange, with the wavy lines at the bottom right of the highlighted area indicating stitching at the end of the tongue portion. As can be

seen, the instep elastic insertion conforms to the overall shape of the end of the tongue portion and extends across it. Hanak also explains that the instep elastic insertion “may be running totally outside the tongue 8 of the shoe, or it may extend into it, possibly it may create the whole tongue.” *Id.*, ¶40.

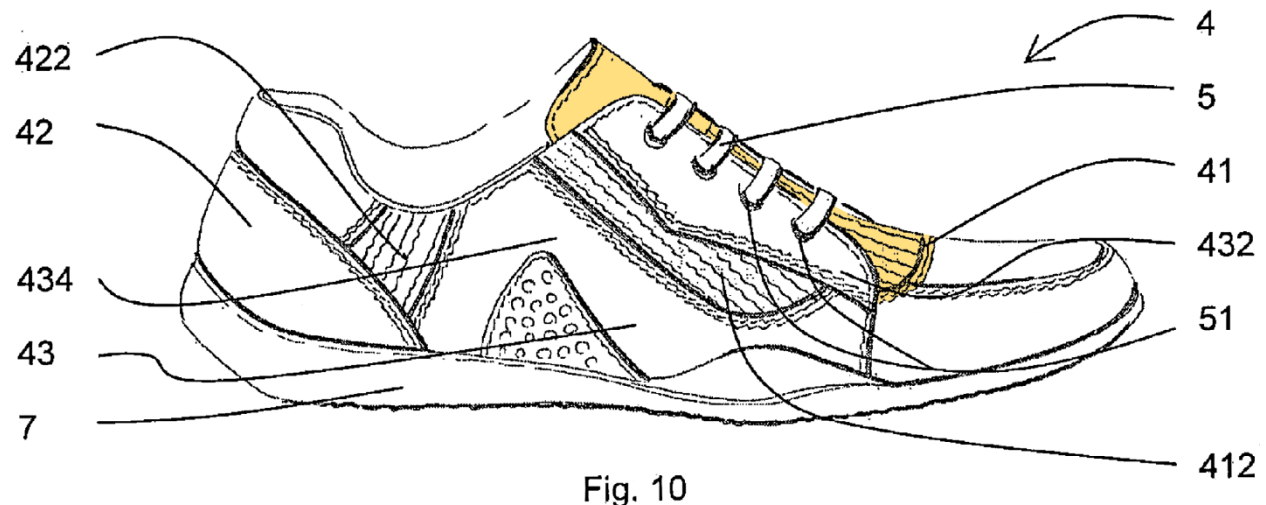


Fig. 10

Hanak, Fig. 10 (annotated with color).

42. Hanak’s various elastic insertions would operate in a similar fashion to the elastic components in Kim, Takahashi, and the other references discussed above. The elastic insertions are constructed from materials such as “textile rubber” with “suitable elastic properties,” *id.*, ¶30, which as Hanak describes enable “the reduction of pressure on the instep of the foot,” *id.*, ¶35. In other words, as the foot enters a shoe with Hanak’s elastic insertions, the upper of the shoe would flex forward and upward to create additional room for the foot, alleviating pressure.

43. A POSITA would have found it obvious to incorporate Hanak’s rectangular instep elastic insertion, shown in Figure 10, into Takahashi and Kim’s

shoes. Both Takahashi and Kim describe loafer-style shoes that have a similar form factor to Hanak Figure 10, and a POSITA would have recognized that the rectangular instep elastic insertion could have been easily placed onto either of Kim and Takahashi's shoes in the same location—extending across the tongue portion on the instep of the shoe and spaced from the shoe's top line—in order to achieve Hanak's stated benefit of reduced pressure on the instep of the foot. Similar constructions are well-known in the art—as noted above, the Complete Footwear Dictionary specifically discusses gorings that are “applied at the shoe's throat or instep” or “over the instep and under the tongue on a loafer shoe,” such as the “front” and “hidden” goring. EX1021, p.13.

C. Foam Footwear Components

i. *Background*

44. 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. Foam can include “[a]ny of various resins in sponge or cellular form with an open or closed cellular pattern.” EX1021, p.12. 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.* 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. Moreover, 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.

45. For example, adidas had a molded heel foam padding technology called GeoFit, which it marketed as an adidas technology from 2005 to 2015. EX1033 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. EX1033, 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.



46. 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 with foam lining at the rear of the shoe with a concave profile towards the forward portion of the shoe's upper.

47. For example, EX1034 is a 2018 review of Nike's PG 2 sneaker that includes a deconstruction. As shown in the image below, the foam lining in the Nike PG 2 is spaced from the shoe's top line and sole portion. Further, the review notes that "[t]he heel padding sticks out to us the most; that area of the shoe was really well done and features lots of nicely sculpted padding for comfort and proper fit." EX1034, p.4.

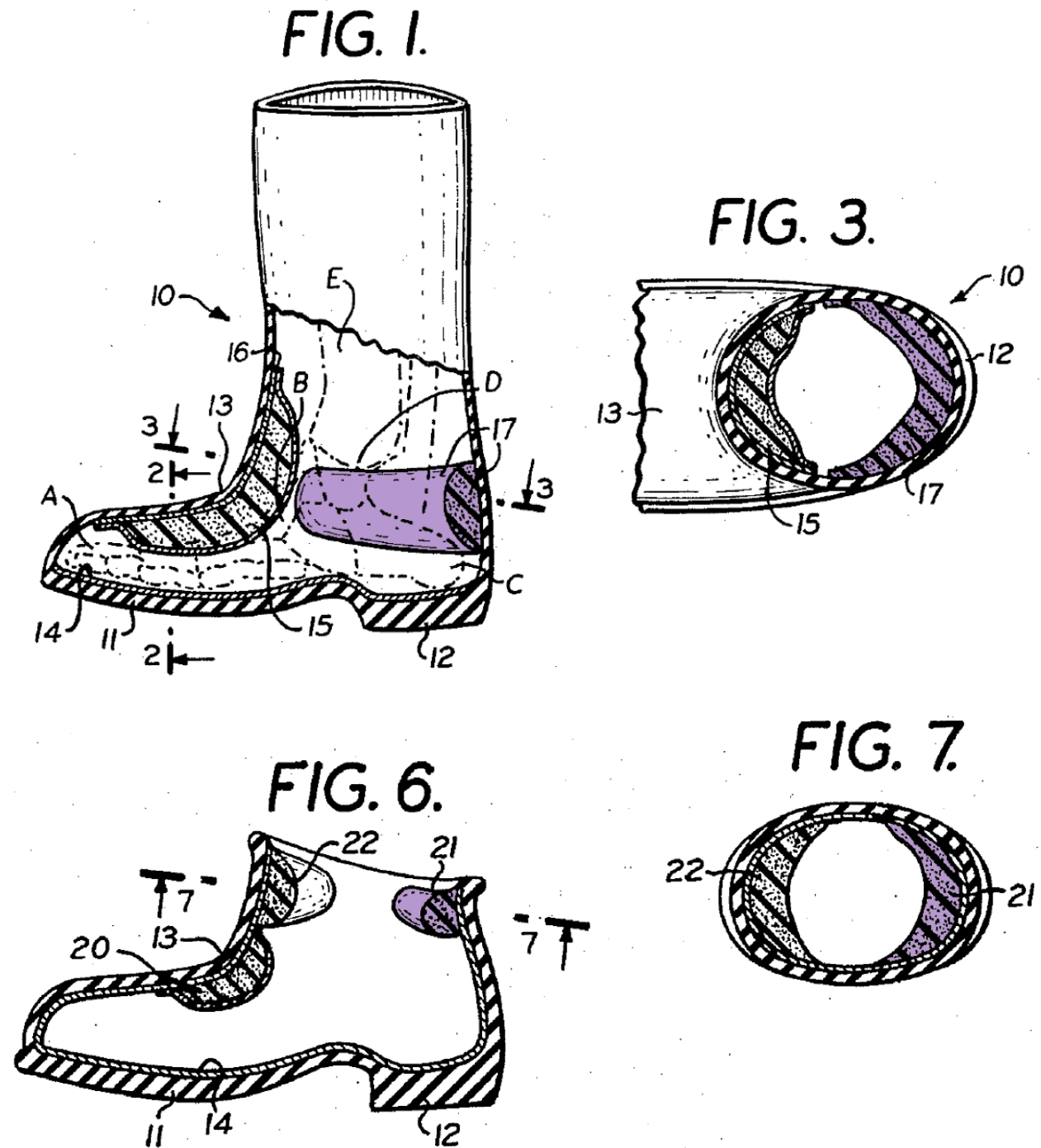


48. This specific spacing of foam lining—above the shoe’s sole and below its top line—was commonplace in the industry prior to 2019. Another Weartesters review, included in EX1035, shows a deconstruction of the Nike Zoom KD 9 Elite, which similarly has a foam liner positioned below the top line and above the sole.



49. U.S. Patent No. 3,693,270 (“Murray”) describes “internal pads” of foam material that are positioned similarly to the PG 2 and Zoom KD 9 Elite. In particular, Murray describes various different “boots, high and low shoes, loafers,” and “slippers” that include “sponge inserts” at the rear of the shoe, made of “foam rubber,” in order to “achieve a tight comfortable fit.” EX1015, 1:16-35. Murray explains that “the heel bone of the foot” engages these foam inserts during walking “so that the boot closely follows the movement of the foot with no tendency to pull

out.” *Id.*, 2:23-35. These inserts are spaced from both the shoes’ top lines and soles, as shown in Figures 1, 3, 6, and 7, and are highlighted purple below:



Murray, Figs. 1, 3, 6, 7 (annotated with color).

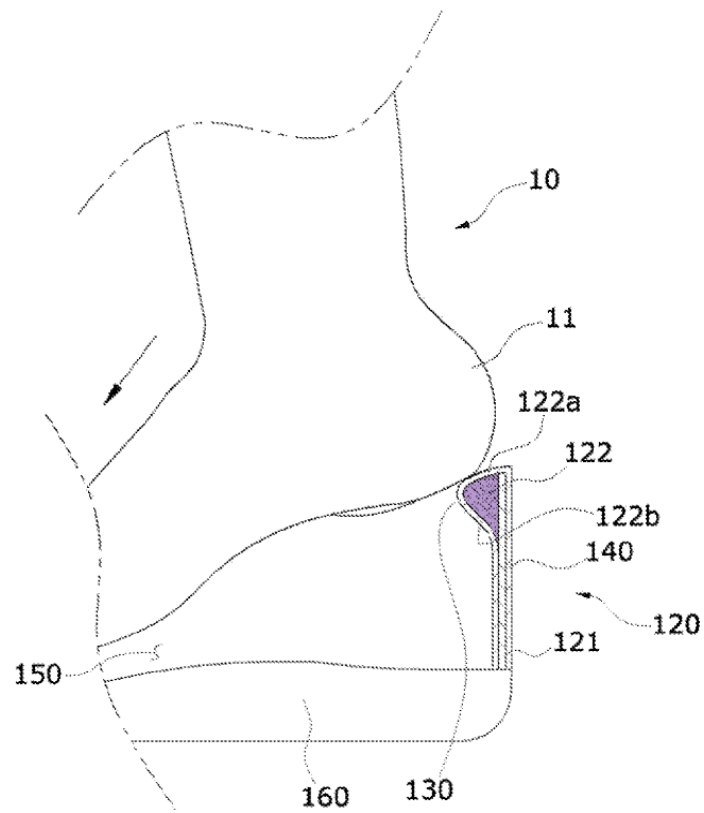
[FIG. 7]



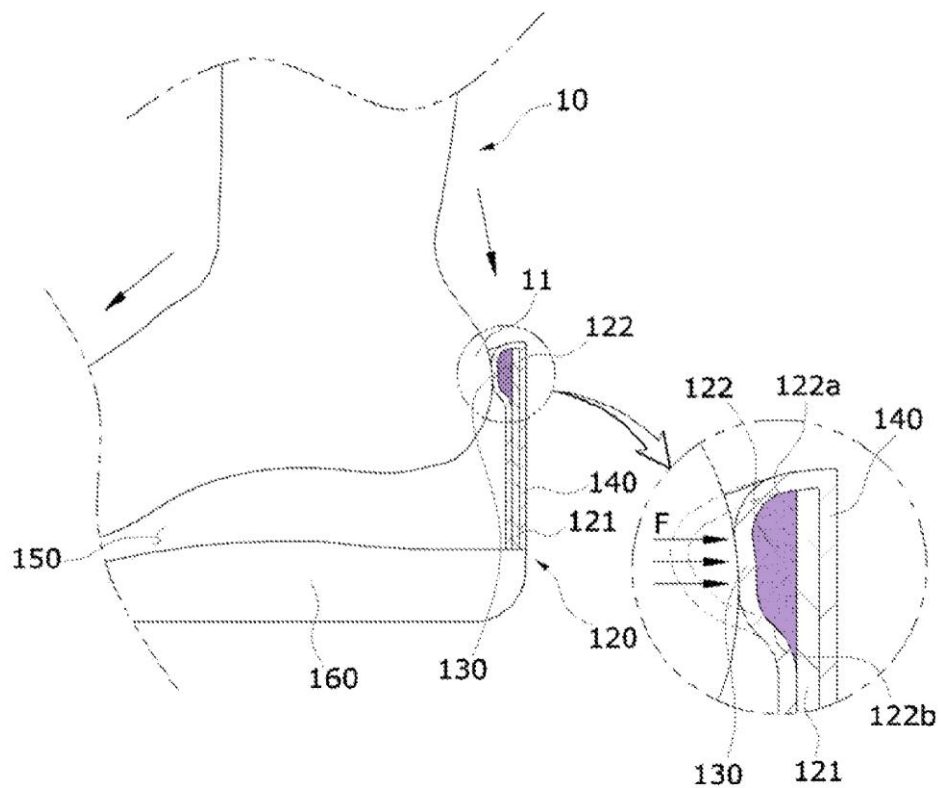
A cross-sectional view of a container assembly. The container body (120) is filled with a green liquid (160). The neck (121) is filled with a purple liquid (122). The neck is surrounded by a sleeve (140). The neck is connected to a cap (122a) which is surrounded by a seal (122b). The cap is surrounded by a seal (121b). The cap is connected to a top part (130) which is surrounded by a seal (150). The top part is connected to a bottom part (160).

51. Shin explains that its foam liner is designed to be deformed as the user is donning the shoe and restored to its original shape once the foot has been fully inserted, thus retaining the foot within the shoe during walking. *Id.*, 5:18-54. This is shown in Figures 5-7:

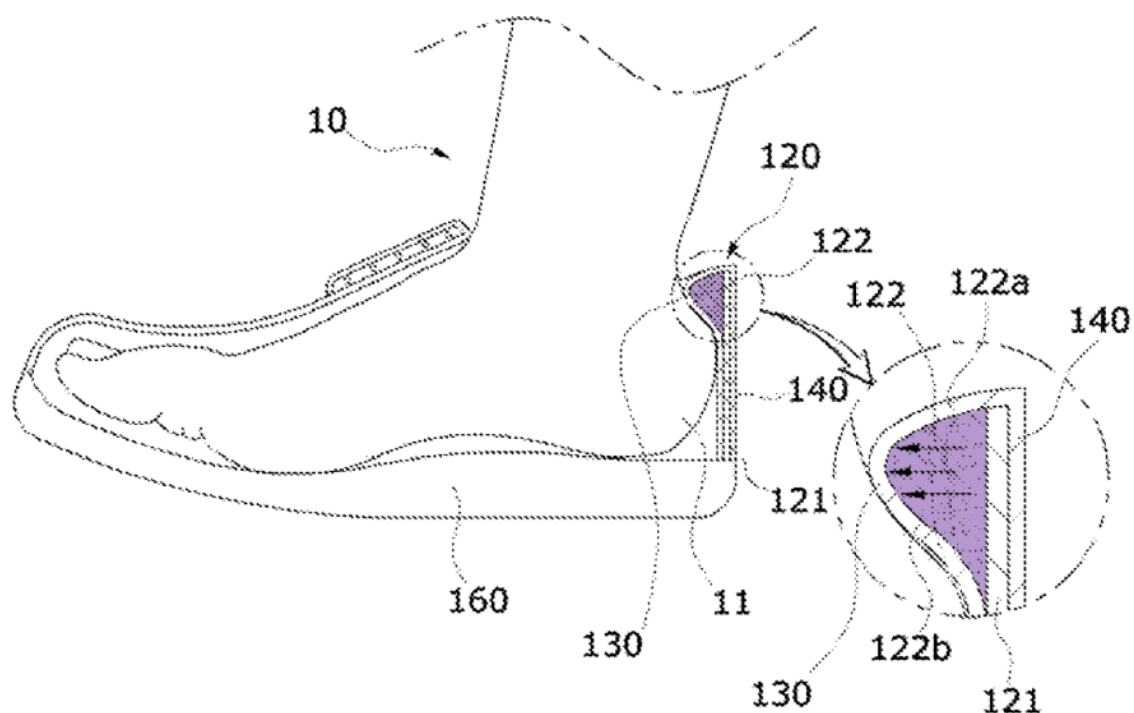
[FIG. 5]



[FIG. 6]



[FIG. 7]



Shin, Figs. 5, 6, 7 (annotated with color).

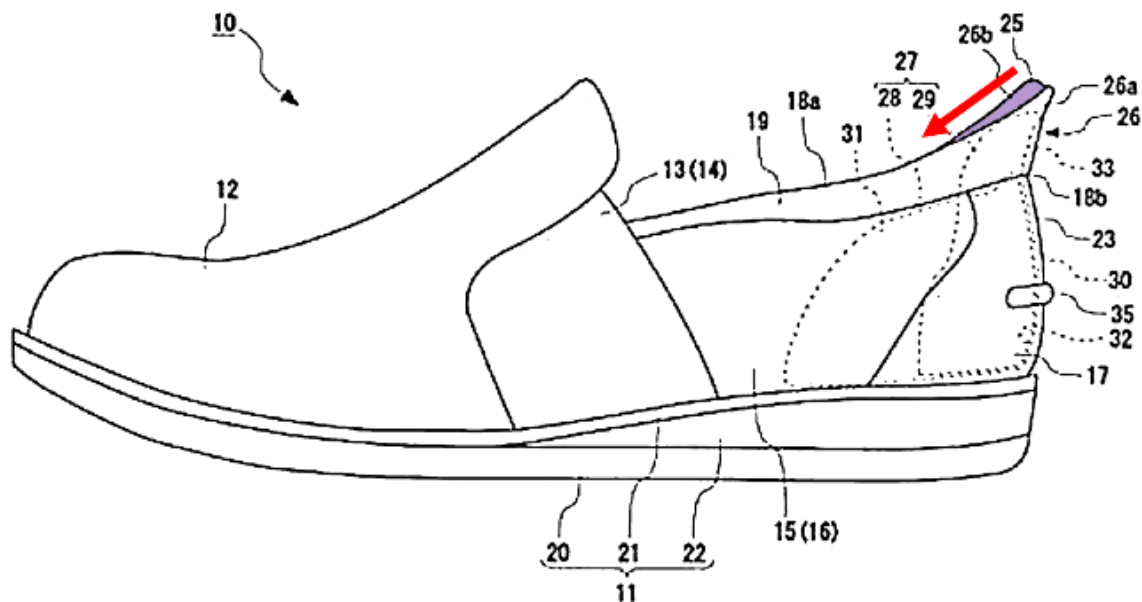
ii. *Foam Lining in Takahashi*

52. Takahashi also 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. EX1005, ¶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. EX1021, p.12. 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.18.

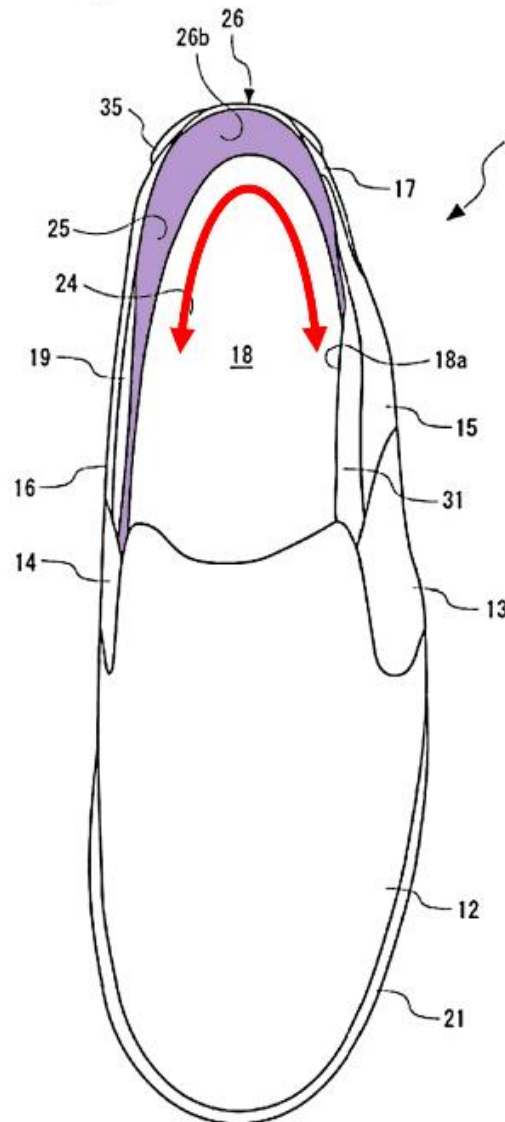
Takahashi’s Figures 1 and 2 show that the lining 25, highlighted in purple below, wraps around the heel region and is oriented downward towards the sole of the shoe:

[FIG. 1]



Takahashi, Fig. 1 (annotated with color and arrow);

[FIG. 2]

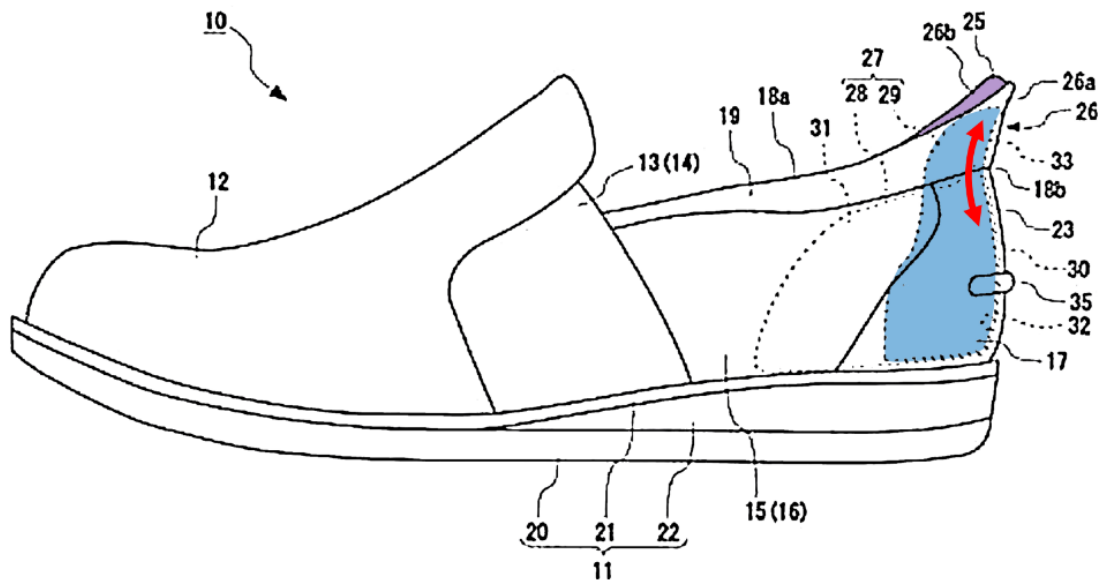


Takahashi, Fig. 2 (annotated with color and arrows).

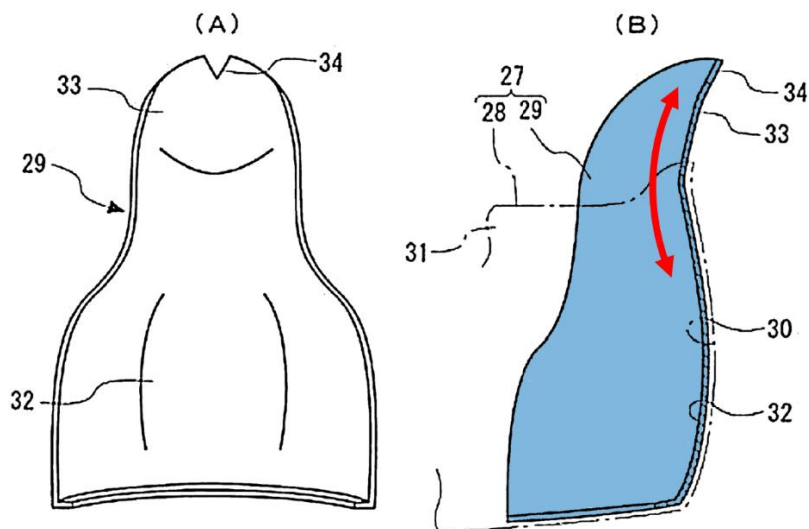
53. Moreover, Takahashi explains that its “heel counter 27 is disposed between the heel portion 17 and the lining 25,” EX1007, ¶59, and that the “inner surfaces of the sides 15, 16 and the heel portion 17 are provided with [the] lining (covering for inside surface) 25.” *Id.*, ¶54. In other words, Takahashi’s lining and foam cushioning follow the geometry of the counter, which provides the shape to

the heel portion of the shoe. This is similar in principle to the Busenitz ADV, which has the foam lining coupled to the heel counter and surrounded by the inside lining of the shoe. As a result, Takahashi's foam lining would follow the convex shape of Takahashi's counter, as illustrated in the annotated figures below:

[FIG. 1]

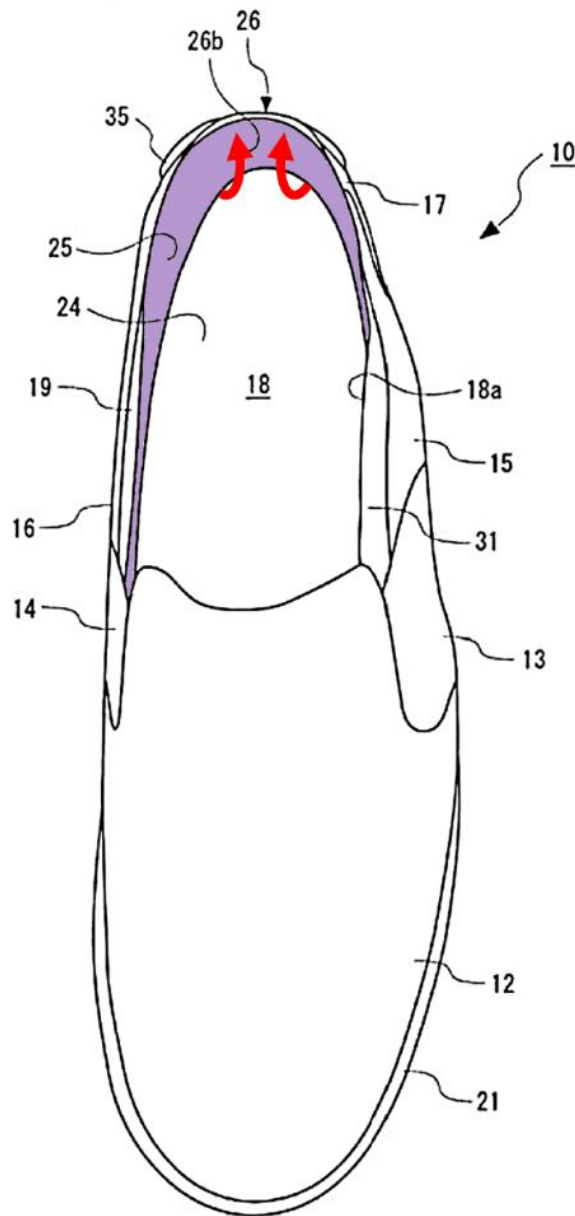


[FIG. 4]



Takahashi, Figs. 1, 4 (annotated with color and arrows);

[FIG. 2]



Takahashi, Fig. 2 (annotated with color and arrows).

54. A POSITA would have understood that Takahashi's foam lining is configured to facilitate heel retention. This is particularly so given that "lining 25" has a "cushion body (e.g., sponge)" with a "cushioning property," which a POSITA would understand facilitates heel retention. Takahashi, ¶54. Takahashi's sponge

cushioning material would function like the foamed cushioning components discussed above for the Busenitz ADV, Nike's PG 2 and Zoom KD 9 Elite, Murray, 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.

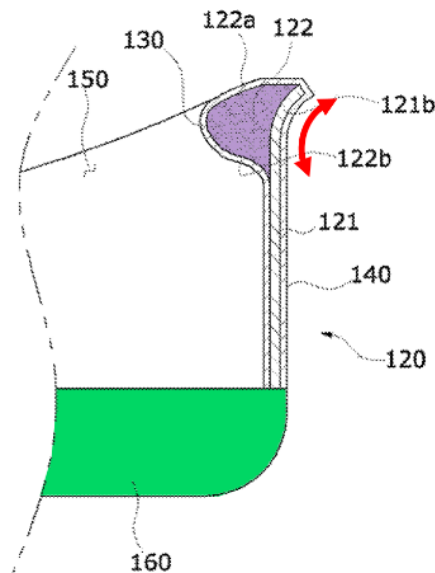
55. Moreover, it would have been an obvious design choice for a POSITA to modify Takahashi's foam lining with the specific geometry and positioning of other references teaching similar liners, such as Murray, to enhance this heel retention functionality. As discussed above, the positioning of Murray's foam liner—high enough for the heel to rest beneath it but underneath the shoe's top line—was specifically designed to secure the foot in the shoe while a user is walking. Because the uses of foam lining for heel retention was conventional in the art of footwear design and manufacture long before 2019, using the positioning of Murray's foam lining in Takahashi would have required only a straightforward alteration to the lining and foam material already disclosed in Takahashi.

iii. *Foam Lining in Kim*

56. Kim, discussed above, does not include foam lining at the heel region. However, it would have been an obvious improvement to Kim's shoe to incorporate such a liner. In fact, a POSITA would have noticed Kim's lack of a foam liner as likely to cause issues with heel retention in the shoe, and would have found it evident that incorporating foam cushioning would have resolved that design problem.

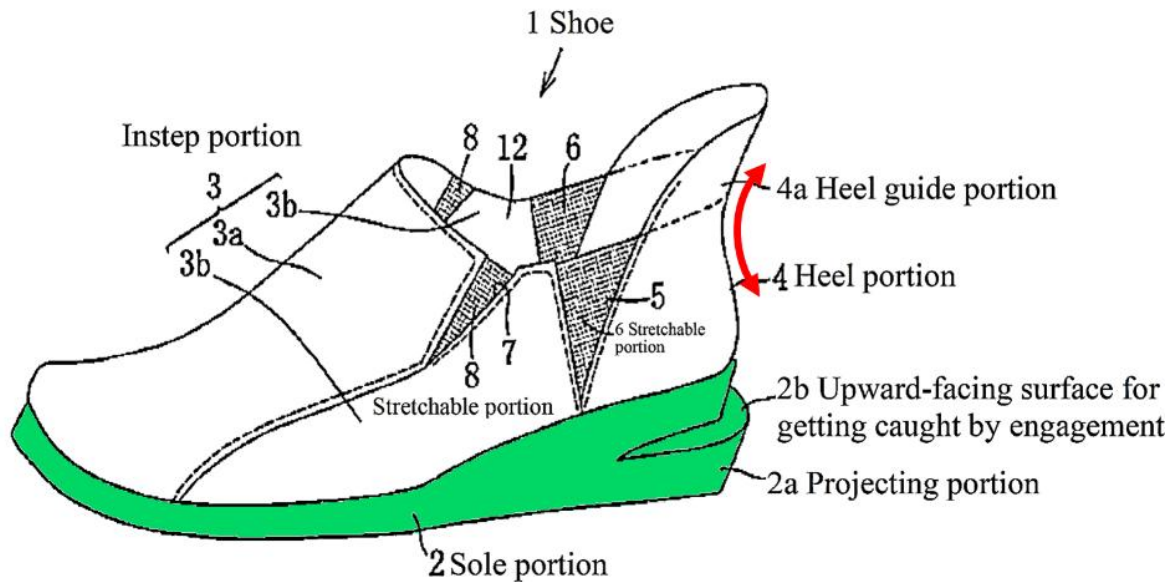
57. In particular, a POSITA would have found it obvious to add Shin's foam liner to Kim, incorporating it along Kim's heel portion and heel guide portion, including to improve Kim's heel retention as taught by Shin. This is particularly so for Shin's Figure 11 embodiment, which has curved geometry where the foam liner (purple) is attached to the stabilizer (indicated by red arrow below), consistent with the curved geometry of Kim's stabilizer in Figure 1 (red arrow):

[FIG. 11]



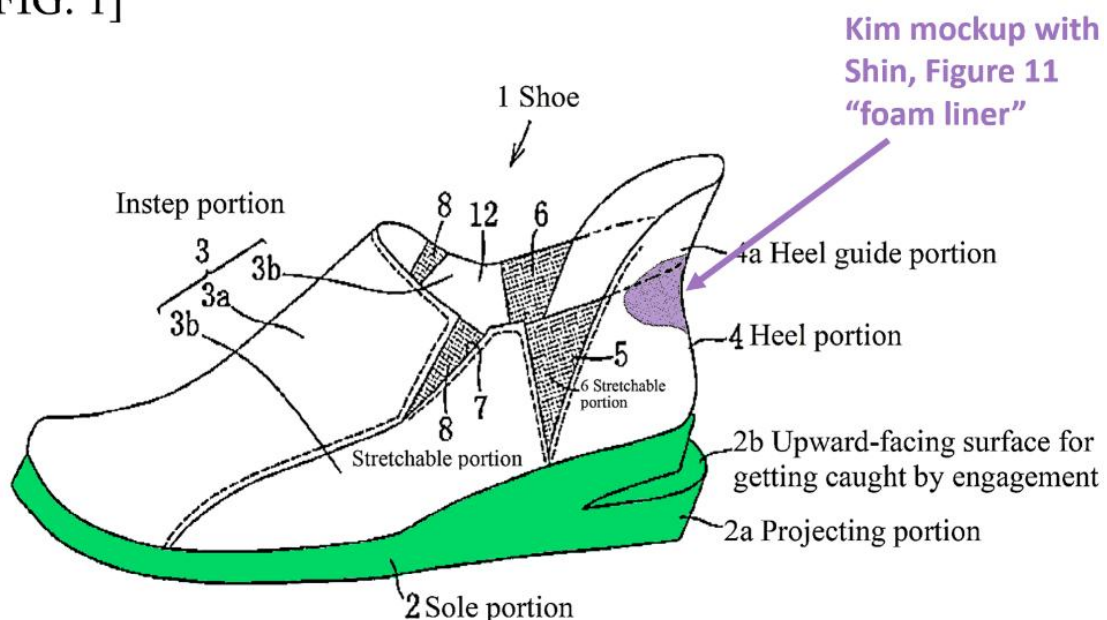
Shin, Fig. 11 (annotated with color and arrow);

[FIG. 1]



Kim, Fig. 1 (annotated with color and arrow). A POSITA thus would have readily understood that Shin's foam liner, Figure 11, could be added to Kim, Figure 1, with minimal modification. To illustrate this, the image below superimposes the foam liner cross-section of Shin, Figure 11, onto Kim's heel, Figure 1:

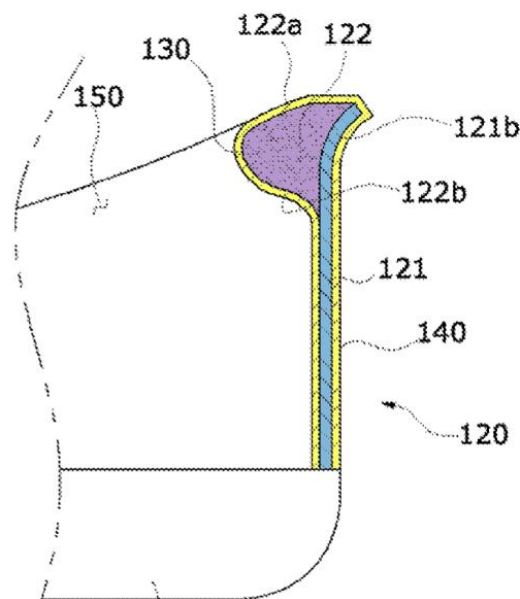
[FIG. 1]



Kim, Fig. 1, with foam liner from Shin, Fig. 11 (mockup). Doing so would have been straightforward and would not require significant modification to the shape of the foam lining from Shin, as Kim's heel and heel guide portions incorporate a similar rearward flare shape as Shin's support member. Moreover, when combined with Kim at its natural location, Shin's foam liner remains both spaced from the sole and spaced from the top line of the shoe—*i.e.*, placed high enough for the heel to rest beneath it, but still underneath the top of the heel guide portion.

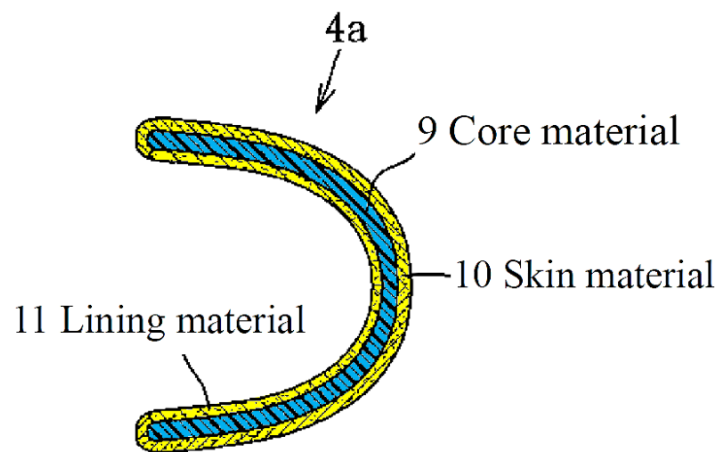
58. Additionally, Shin discloses that its foam liner “is provided between the inner skin 130 and the outer skin 140” of the upper and “protrudes from the support member 121 in an inward direction.” Shin., 4:40-4. Figure 11 of Shin below shows the “elastic member 122” (highlighted purple), “inner skin 130” and “outer skin 140” (both yellow), and “support member 121” (blue):

[FIG. 11]



Shin, Fig. 11 (annotated with color). A POSITA would have understood that Shin's foam liner can be incorporated in Kim's design in the same way, as Kim likewise includes both "a hard core material" (blue) and "a soft lining material covering the inside of the core material" (yellow), as shown in annotated Figure 2 below:

[FIG. 2]



Kim, Fig. 2 (annotated with color); *id.* ¶10. A POSITA thus would have found it obvious to incorporate Shin's foam liner between the "11 Lining material" and "9 Core material" shown above, as this was a conventional way of including foam lining at the heel of a shoe.

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: July 22, 2026

A handwritten signature in black ink, reading "Angus Wardlaw", is written over a horizontal line. The signature is stylized with a large initial 'A' and a long horizontal stroke at the end.

Angus Wardlaw

APPENDIX A

Angus Nimlin Wardlaw

Edinburgh, UK

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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>

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.

