

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNDER ARMOUR, INC.
Petitioner

v.

ATHALONZ, LLC
Patent Owner

Case No. TBD
Patent No. 11,375,768

DECLARATION OF GRANT DELGATTY

I. ENGAGEMENT AND COMPENSATION

1. My name is Grant Delgatty. I have been retained by Under Armour, Inc. for the purpose of providing my opinion with respect to the unpatentability of U.S. Patent No. 11,375,768 (“’768 Patent”). I am being compensated for my time in preparing this declaration at my standard hourly rate of \$400, and my compensation is not dependent upon my opinions or the outcome of the proceedings. My curriculum vitae is attached as Ex. 1003.

II. QUALIFICATIONS

2. I have designed and developed performance athletic shoes, among other types of shoes, for more than 25 years, and have extensive experience studying sole design, as well as the effects of cushioning and stability, particularly in the context of performance athletic footwear.

3. Early in my career, as an athletic footwear designer, I had the opportunity to be mentored and work directly under the tutelage of the legendary Bill Peterson, who worked as one of the first industrial designers at Nike and its prior name of Blue Ribbon Sports. Bill was originally given the task of developing the methodology by which Frank Rudy’s patented airbag technology could be commercialized into a viable construction application for mass production. It was under Bill’s guidance where I first learned to apply principles in shoe construction methodologies of performance footwear and the aspects of how biomechanics

influenced new and innovative solutions for constructing performance athletic footwear including innovative sole designs.

4. From 1996 to 1999, I worked as the only employee at E-West Designs, an athletic footwear design and development consulting firm started by Bill Peterson and ex-Nike Olympic trial runner, Mark Feig. At E-West Designs, I worked on many commissioned projects within the performance footwear industry, including being credited for designing the 50th anniversary PUMA CELL 5-0 basketball shoe. In addition, I worked on the Avia cantilever system, the first line of Shaquille O'Neal's basketball shoe company, DUNK.NET, an internal harness technology for Vans step-in snowboard boots, and many other shoe-related innovations.

5. In 1999, I became the in-house Director of Design for the DVS Shoe Company, which was a startup performance skate shoe company focused on developing cutting edge technologies to address the performance needs of professional skateboarders. While at DVS, I developed many new performance technologies, including the Shock pad, Dual Lacing Technology, and the DIM (Drop In Midsole) system, which utilized an innovative over-lasted upper technology to allow for an insole containing an integrated combination airbag/impact pad cushioning technology to address heel bruising that the company's professional team riders were experiencing.

6. From 2001-2008, I was the Senior Director of Product Design at Vans, where I managed a team of 5 Designers, 6 Senior Designers, and 1 Design Director and was responsible for overseeing the design of all Vans shoes across all product categories in the Vans portfolio.

7. More recently, I have been working on a new shoe technology that provides an innovative sustainable construction methodology for performance athletic shoe soles. This work has yet to be released and is subject to a nondisclosure agreement, therefore I cannot provide further details at this time.

8. Additional details of my education and employment history, recent professional service, patents, publications, and other testimony are set forth in my current curriculum vitae, attached to this Declaration as Ex. 1003 (See Delgatty CV).

III. MATERIALS REVIEWED AND EXHIBITS

Exhibit No.	Description
1001	U.S. Patent No 11,375,768 (“the ’768 patent”)
1005	U.S. Patent No. 6,158,151 (“Won”)
1006	U.S. Patent Publication No. 2007/0107258 (“Umezawa”)
1007	U.S. Patent No. 7,464,428 (“Norton”)
1008	U.S. Patent No. 4,642,911 (“Talarico ’911”)

1009	U.S. Patent No. 4,615,126 (“Mathews”)
1010	U.S. Patent No. 5,025,573 (“Giese”)
1011	Prosecution History Excerpts of U.S. Patent Application No. 16/555,171
1012	Excerpts from Athalonz’s Infringement Contentions, served in <i>Athalonz, LLC v. Under Armour</i> , Case No. 2:23-cv-00193 (E.D. Tex.)
1013	1977 Nike Boston Running Shoe
1014	FootJoy 51409
1015	FootJoy 1970 Product Catalog
1016	U.S. Patent No. D275146
1017	U.S. Patent No. D310294
1018	1971 Nike Cortez
1019	Merriam-Webster’s Collegiate Dictionary Definition of “Gradient”
1020	U.S. Patent Publication No. 2010/0242307 (“Gallas”)
1021	CAD Image of Heel Platform of UA HOVR Drive

IV. LEGAL STANDARDS

9. In forming my opinions and considering the subject matter of the '768 Patent and its claims in light of the prior art, I am relying on certain legal principles that counsel explained to me. My understanding of these concepts is summarized below.

A. Claim Construction

10. I have been informed that the United States Patent and Trademark Office interprets claim terms in an *inter partes* review proceeding under the same claim construction standard that is used in a United States federal court. I have been informed that under this standard, the meaning of claim terms is considered from the viewpoint of a person of ordinary skill in the art at the time of the alleged invention.

11. I have been informed that claim terms are generally given their ordinary and customary meaning as understood by one of ordinary skill in the art in light of the specification and the prosecution history pertaining to the patent. I have been informed, however, that claim terms are generally not limited by the embodiments described in the specification.

12. I have been informed that in addition to the claims, specification, and prosecution history, other evidence may be considered to ascertain the meaning of claim terms, including textbooks, encyclopedias, articles, and dictionaries. I have

been informed that this other evidence is often less significant and less reliable than the claims, specification, and prosecution history.

B. Obviousness

13. I have been informed that a patent claim can be unpatentable under 35 U.S.C. § 103(a) if it is obvious. A claim is unpatentable for obviousness if the differences between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious at the time the alleged invention was made to a person having ordinary skill in the art to which the subject matter pertains. I further have been informed that a hypothetical person of ordinary skill in the art is assumed to know and have all relevant prior art in the relevant subject matter covered by the patent at issue and all analogous prior art.

14. I have been informed that obviousness does not require that every element of the claim be in a single prior art reference. Instead, claim elements can be described in different prior art references, so long as there is motivation or sufficient reasoning to combine the references and a reasonable expectation of success in achieving what is set forth in the claims.

15. I have been informed that one must consider the claim “as a whole” when evaluating obviousness. This consideration must be made from the perspective of the hypothetical person of ordinary skill in the relevant art, and that such perspective must be considered as of the time the invention was made.

16. I have been informed that in considering the obviousness of a claim, one must consider the scope and content of the prior art, the level of ordinary skill in the art at the relevant time, the differences between the prior art and the claim, and any “secondary considerations.”

17. I have been informed that “secondary considerations” include real-world evidence that can tend to make a conclusion of obviousness either more probable or less probable. For example, the commercial success of a product embodying a claim of the patent could provide evidence tending to show that the claimed invention is not obvious. To understand the strength of the evidence, one would want to know whether the commercial success is traceable to a certain aspect of the claim not disclosed in a single prior art reference (a “nexus”). One would also want to know how the market reacted to disclosure of the invention and whether commercial success might be traceable to things other than innovation, for example, the market power of the seller, an advertising campaign, or the existence of a complex system having many features beyond the claims that might be desirable to a consumer. One would also want to know how the product compared to similar products not embodying the claim. I have been informed that commercial success evidence should be reasonably commensurate with the scope of the claim, but that is not necessary for a commercial product to embody the full scope of the claim.

18. Other kinds of secondary considerations are possible. For example, evidence that the relevant field had a long-established, unsolved problem or need that was later provided by the claimed invention could be indicative of nonobviousness. Evidence that others had tried but failed to make an aspect of the claim might indicate that the art lacked the requisite skill to do so. Evidence of copying the patent owner's products before the patent was published might also indicate that its approach to solving a particular problem was not obvious. Evidence that the art recognized the value of products embodying a claim, for example, by praising the named inventors' work, might tend to show that the claim was non-obvious.

19. I further have been informed that prior art references can be combined where there is an express or implied rationale to do so. Such rationale might include an expected advantage to be obtained or might be implied under the circumstances. For example, a claim is likely obvious if design needs or market pressures existing in the prior art make it natural for one or more known components to be combined where each component continues to function in the expected manner when combined (i.e., when there are no unpredictable results). A claim is also likely unpatentable where it is the combination of a known base system with a known technique that can be applied to the base system without an unpredictable result. In these cases, the combination must be within the capabilities of a person of ordinary skill in the art.

20. I have been informed that when considering obviousness, one must not refer to teachings in the specification of the patent itself. One may, however, refer to portions of the specifications admitted to being prior art, including the “BACKGROUND” section.

V. THE '768 PATENT

A. Overview

21. The '768 patent relates to “athletic positioning footwear.” Ex. 1001 at 1:45-46. The '768 patent explains that previous athletic footwear were known to include an upper, a sole, an insole, cleats or spikes. *Id.* at 1:56-67. Previous athletic shoes were also known to have a “sole and/or padded insole [that] provide a relatively flat platform for the foot” or alternatively, provide a “heel portion of the shoe [that is] higher than the toe portion of the shoe from a side perspective.” *Id.* 2:1-6, Figs. 1-2.

22. Unlike previous shoes, those described in the '768 patent include a forefoot platform that is constructed to be more compressible near its inner edge than its outer edge. *Id.*, 27:50-57; 33:60-34:30; Figs 93-94, 112-113. The '768 Patent claims also require that the sole section includes a heel platform that is substantially uniform in height around its perimeter. *Id.*, Claim 1.

23. As discussed below, both of these shoe features were well-known to a person of ordinary skill in the art (“POSITA”) prior to the filing date of the ’768 Patent.

B. Summary of the Prosecution History

24. During prosecution of the ’768 patent, claims 1-9 were rejected as anticipated by Talarico ’911 (Ex. 1008). Ex. 1011, p. 210-11, 122, 90. In response, the Applicant amended the claims to include “wherein the forefoot platform has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater than the second thickness.” *Id.* p. 78.

25. It does not appear that the Applicant refuted that Talarico ’911 taught the other elements of the ’768 pending claims.

VI. CLAIM CONSTRUCTION

26. I was asked by counsel to apply the following definitions in my analysis. For all terms not specifically construed, I applied the plain and ordinary meaning of the terms in the ’768 Patent and prior art.

- a. a forefoot platform constructed of a second material having a “gradient compression factor” that allows it to compress more near its inner edge than its outer edge – requires that the forefoot platform becomes “increasingly less compressible” as you move from its inner edge to its outer edge.
- b. “heel platform having a first height that is substantially uniform around a perimeter of the heel platform” – means the perimeter of the portion of the shoe where the heel of the foot sits, not the outer-most perimeter

of the shoe, and encompasses a heel platform that includes some degree of curvature and height change from its inner edge to its outer edge, and from its front edge to its rear edge, as shown in Ex. 1012, Ex. E, pp. 23-24. I also reviewed a confidential Under Armour design drawing of the HOVR Drive product shown in Ex. 1012 an excerpt of which is included as Ex. 1021, showing that the heel platform has a radius of curvature and height change from the inner to the outer edge and from front to back.

VII. PERSON OF ORDINARY SKILL IN THE ART

A. Understanding of the Test

27. In rendering the opinions set forth in this declaration, I was asked to consider the patent claims and the prior art through the eyes of a POSITA as of the time of the alleged invention, which I understand is March 8, 2011, the filing date of Provisional Application No. 61/450,485, to which the '768 patent claims priority.

28. I have been informed that the factors considered in determining the ordinary level of skill in a field of art include the level of education and experience of persons working in the field, the types of problems encountered in the field, the teachings of the prior art, and the sophistication of the technology at the time of the alleged invention.

29. I have been informed that a person of ordinary skill in the art is not a specific real individual, but instead is a hypothetical individual having the qualities reflected by the factors above. I have been informed that a person of ordinary skill in the art would also know the teachings of the prior art, including the art cited below.

B. Definition

30. Based on my education, experience, and knowledge of problems encountered in the field, the POSITA would have (1) at least a B.S. or equivalent degree related to industrial or product design and at least two years' experience designing or developing athletic shoes; or (2) at least five years designing or developing athletic shoes.

31. I believe I would meet (or exceed) this definition and would have met this definition in the relevant timeframe. I have also worked with and managed many individuals who would meet this definition, including at the date of filing of the '768 patent. My testimony is offered from this perspective.

VIII. PRIOR ART

A. Effective Prior Art Dates

33. U.S. Patent Publication No. 2007/0107258 ("Umezawa," Ex. 1006) was published on May 17, 2007.

34. U.S. Patent No. 7,464,428 ("Norton," Ex. 1007) issued December 16, 2008.

35. U.S. Patent No. 6,158,151 ("Won", Ex. 1005) issued December 12, 2000.

36. U.S. Patent Publication No. 2010/0242307 ("Gallas," Ex. 1020) published on September 30, 2010.

37. U.S. Patent No. 4,642,911 (“Talarico ‘911,” Ex. 1008) issued February 17, 1987.

B. Overview of Umezawa

38. Umezawa discloses shoes suitable for athletic activities “such as golf, tennis, squash, field hockey, basketball, aerobic activity or the like.” Ex. 1006, ¶ 3.

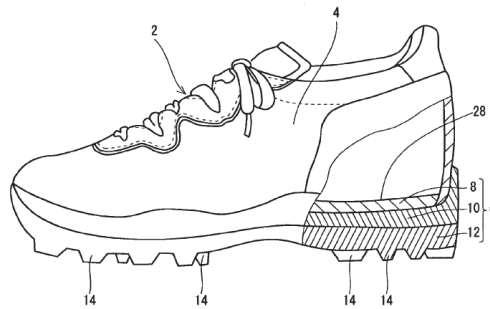


Fig. 1

39. Umezawa explains that in golf, “[d]uring the swing, the golf player kicks the ground while applying his or her own body weight to the inside of the kicking foot. The golf player receives his or her own body weight mainly on the inside of the pivoting foot. At this time, force is transferred to the ground via the shoe.” *Id.*, ¶ 8. Similarly, in tennis, squash, field hockey, basketball and aerobics, “a movement in which a player's body weight is applied to the inside of a foot is observed.” *Id.*, ¶ 9. Therefore, it would be beneficial to “provide a shoe in which a wearer’s body weight is easily applied to the inside of a foot.” *Id.*, ¶ 10.

40. To accomplish this goal, Umezawa discloses shoes having a midsole with a forefoot platform made up of “a low elastic part 20 and a high elastic part 22,” as shown in Figs. 2-3. *Id.*, ¶ 36.

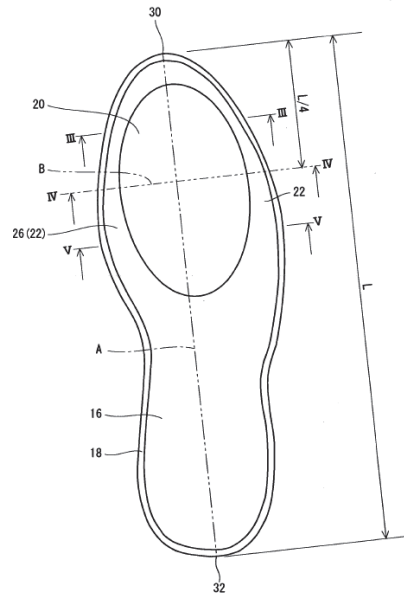


Fig. 2

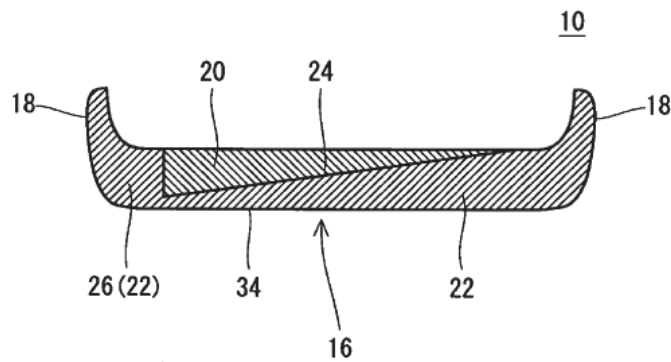


Fig. 3

41. Umezawa explains that “[t]he elastic modulus of the low elastic part 20 is lower than that of the high elastic part 22. When a compression load is applied to the midsole 10, the low elastic part 20 is more easily deformed than the high elastic part 22.” *Id.*, ¶ 36.

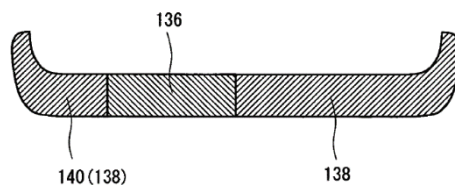


Fig. 15

42. Umezawa also discloses a version where the boundary between the low elastic part and the high elastic part is perpendicular, as depicted in Figure 15.

Umezawa explains the benefits associated with the design of its midsole:

When a golf player wears these golf shoes 2 and the body weight of the golf player is applied to the bottom part 6, this midsole 10 is compressed. Since the thickness of the low elastic part 20 is larger in the inside, the inside compression deformation is larger. Since the thickness of the high elastic part 22 is larger in the outside, outside compression deformation is smaller. In this midsole 10, applying the body weight generates unbalanced deformation. Deformation of the midsole 10 displaces the position of an upper surface 28 (FIG. 1) of the insole 8. The downward displacement of the upper surface 28 in the inside is larger than the downward displacement of the upper surface 28 in the outside. The insole 8 inclines upward from the inside to the outside. The foot of a golf player also inclines upward from the inside to the outside. The body weight of a golf player is mainly applied to the inside. As mentioned above, when a golf player swings, the golf player kicks the ground with the inside of the kicking foot. Since the foot is inclined, the golf player easily transfers the force to the ground. This midsole 10 is suitable for the right foot of a right-handed golf player. These golf shoes 2 contribute to generation of high head speed. The large head speed generates a long flight distance.

Id., ¶ 38.

43. Umezawa explains that the material and structure of the remainder of the golf shoe, including that of the upper, the insole and the outsole, are the same as

those of previously known golf shoes. *Id.*, ¶ 32. Umezawa also discloses that the novel midsole has a consistent thickness throughout, which includes the heel platform, as shown in Figs. 2-4. *See id.*, ¶ 52.

C. Overview of Norton

44. Norton discloses sole elements for sports shoes that have a specific density distribution in a transverse direction. Ex. 1007, Abstract. Norton recognizes that injuries can arise during athletic activities such as running or jogging associated with pronation (rotation of the foot from the outside of the foot to the inside) or supination (rotation of the foot from the inside to the outside). *Id.*, 1:22-46. Norton also recognizes that prior art shoes existed that attempted to address these potential injuries by including dual density soles constructed of two different materials of different densities that were separately formed and subsequently connected to each other. *Id.*, 1:47-2:50. But Norton recognized that the use of two materials has many drawbacks, such as problems associated with the interconnection of the materials, increased labor costs and more complex production requirements, so Norton invented a method of providing a variably density sole using only a single material. *Id.*, 2:51-67, 3:1-24.

45. Norton discloses a sole element with a lateral density variation made up of a single material that is “pressure forming into the desired density distribution,” as shown in Figs. 3B-4B. *Id.*, 3:14-15; 3:33-56.

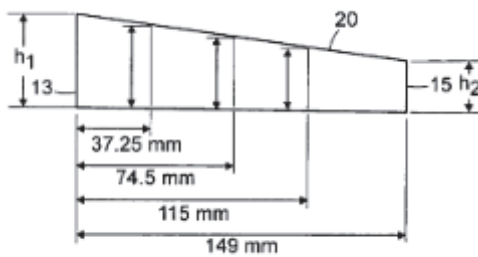


FIG. 3B

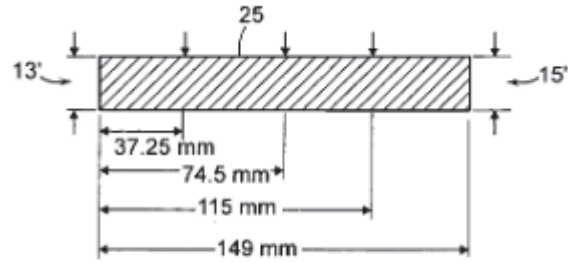


FIG. 4B

The locally varying hardness of the sole unit 25 can be explained by the surplus of material on the left side 13, which is compressed more than the material on the right side 15 during the final forming step in such a way that a continuously varying density distribution is obtained in the sole unit 25. The resulting density, in turn, influences the hardness and therefore the elasticity of the sole unit 25.

Id., 8:12-18.

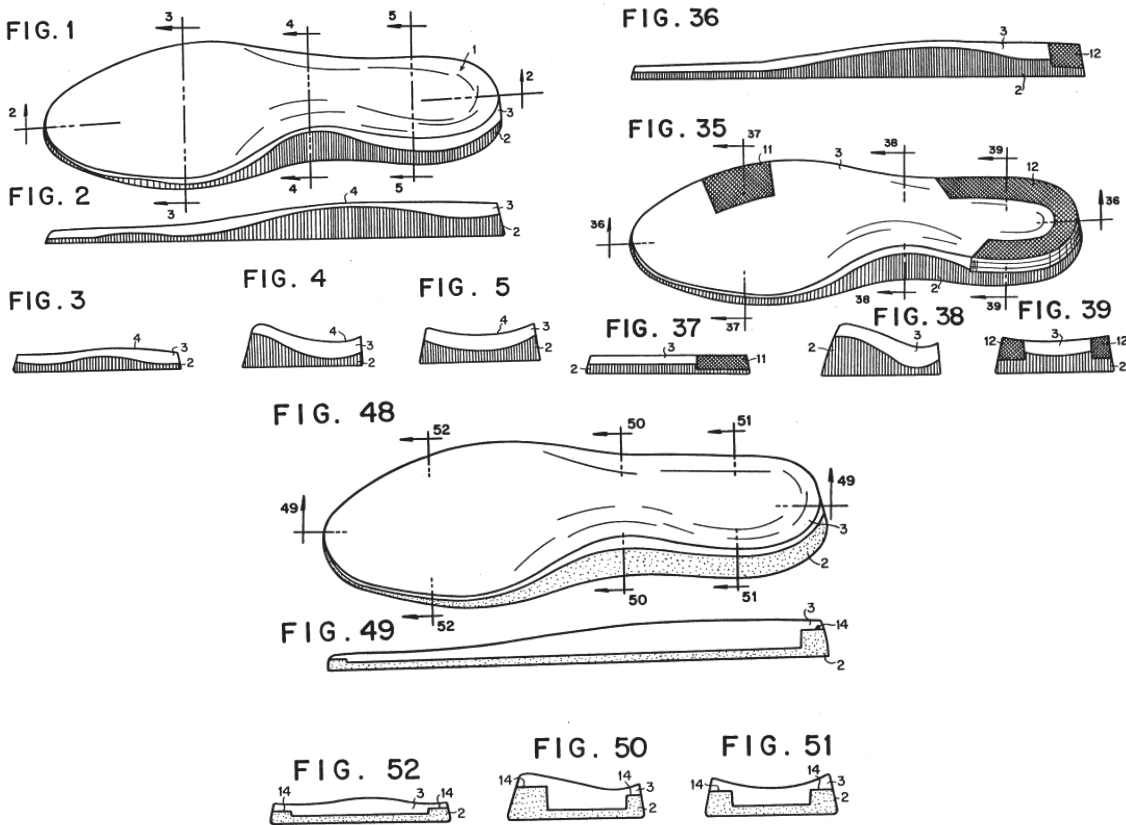
46. Norton also explains that the “[d]ensity can increase gradually from a lateral side of the sole element to a medial side of the sole element” or vice versa.

Id. 4:7-13. The sole element has a consistent thickness throughout, including in the heel section. *Id.*, 7:39-43, Figs. 4A, 4B.

47. Norton incorporates several prior art patents by reference, including U.S. Patent Nos. 4,642,911 (Ex. 1008, “Talarico ‘911”) described below; 4,615,126 (Ex. 1009, “Mathews”); and 5,025,573 (Ex. 1010, “Giese”). *Id.*, 1:47-38.

48. Giese also discloses multi-density shoe soles. Ex. 1010, Abstract. Giese discloses several designs where the heel platform is substantially uniform in

height from its inner edge to its outer edge. *See, e.g., id.*, Figs. 1-5, 36-39, 48-51; 7:16-18.



49. Giese also acknowledges that, “historically, shoe bottoms [] consisted primarily of flat surfaces on both their top and bottom.” *Id.*, 1:10-27.

D. Overview of Won

50. Won discloses golf shoes designed to help a golfer “maintain[] balance [] in order that a golfer can swing naturally.” Ex. 1005, 1:30-31. Won explains that the improved golf shoes allow “all golfers from beginners to professionals [to] have proper and comfortable address stance,” which enhances accuracy and increase the flying distance of the ball. *Id.*, 2:63-67.

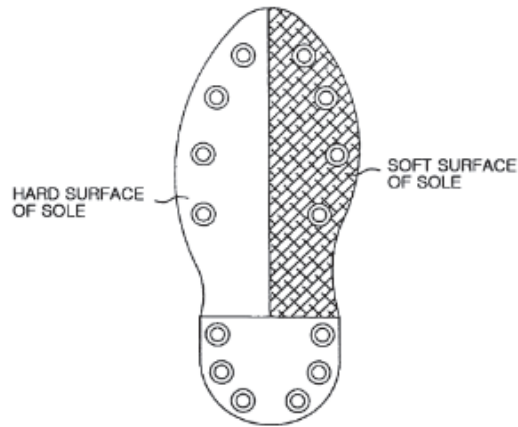


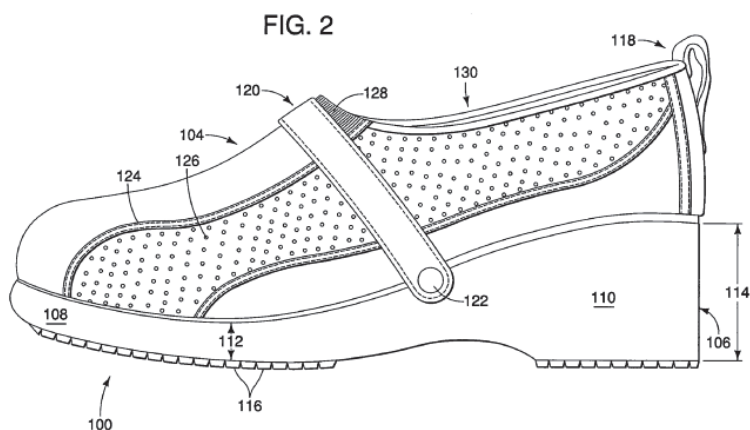
FIG. 5

51. Won discloses golf shoes having a sole “formed such that the inside surface and outside surface separated by a central longitudinal axis of the sole (or mid sole) are different from each other,” as shown in Figure 5. *Id.*, 4:46-50. Here, “the inside surface is soft surfaced and outside surface is hard surfaced” so “[w]hen a golfer puts his both feet together to take a stance for swing, the spikes fitted on the part of the soft surface are pressed down because they are fixed on soft surface. But spikes formed on the hard surface remain the same position so that the sole is tilted toward the soft surface. Therefore the pair of shoes facing each other can be easily tilted to the insides of the shoes.” *Id.*, 4:50-58. Won explains that this arrangement “facilitates bending inward the player’s legs to attain stability at address and swing.” *Id.*, 6:28-36.

52. Won also discloses golf shoe designs that include a heel platform with a substantially uniform height. *See, e.g.*, Figs. 2, 3, 6, 7; 1:42-50; 2:51-53.

E. Overview of Gallas

53. Gallas discloses golf shoes designed with a “rear portion [with] an elevation that is greater than the elevation of the front portion such that, when worn by a golfer, the heel of the foot is elevated above the toes of the foot.” Ex. 1020, Abstract; *see also id.*, ¶ 0021.



54. Gallas explains “[b]y elevating the heel of the foot above the toes, a golfer may be able to create the proper knee flex, while easing the weight transfer needed to make an athletic move, thereby enhancing contact and swing.” *Id.*, ¶ 0012.

55. Gallas further explains the benefits of this design:

With the shoe FIG. 2, 100 the golfer may improve over a standard golf shoe, the ability to maintain a more effective weight distribution (e.g., weight on the heels during upswing and on the toes during downswing), spine angle, and knee flex during the set up and throughout the golf swing. For example, as the body turns into the backswing and the weight shifts back into the heels of the foot, the elevated heel of the shoe FIG. 2, 100 may create a solid foundation for the golfer's weight. The angle of the shoe, slanting down from the back to the front, may facilitate weight transfer from the heels to the toes at impact. The

elevation and support provided by the shoe may compensate for any lack of flexibility, strength, and/or consistency in, for example, amateur players, older players, less athletic players, and others.

Id., ¶ 0017.

56. Gallas also explains that:

elevating the heel at impact may improve the golfer's ability to make a stronger move at the ball 14 on the downswing which may result in improving the golfer's contact with the ball 14. Additionally, the elevated heel of the shoe 100 may create flex in the knees which may further create torque during the backswing and may eliminate locking of the back leg. The knee flex and resulting torque may allow the golfer to assume a more athletic position to make a stronger move toward the ball 14 than if the weight was maintained differently, for example, with both feet flat on the ground or weight positioned more heavily on either front or back foot.

Id., ¶ 0018; *see also id.*, ¶¶ 0019, 0022.

F. Overview of Talarico '911

57. Talarico '911 discloses a midsole for a shoe comprised of different compressibilities of materials arranged across the width of the forefoot of a shoe.

Ex. 1008, Abstract. For example, Talarico '911 explains:

The present invention is intended for any and all footwear wherein dual-density or dual-compressibility materials or combinations of different materials may be incorporated into either the midsole, outersole, or innersole construction of the footwear.

Id., 1:11-18.

58. Talarico '911 discloses multiple embodiments in which a dual-density forefoot can be provided. For example, the two materials can be provided side-by-side, as shown in Figs. 11 and 15. *See also* Ex. 1008, 15:15-22. 20:1-13.

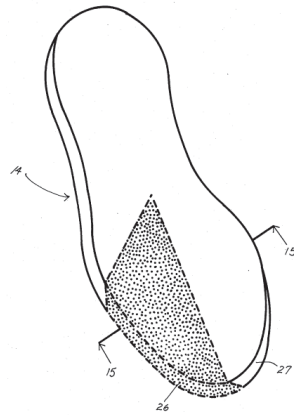


FIG. 11

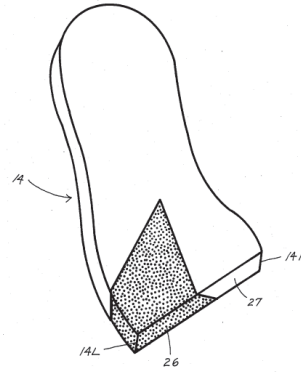


FIG. 15

59. Alternatively, a 45-degree split can be provided between the two materials, which allows for “a more even and gradual alteration of the weight-bearing gravitational forces as they are delivered and directed across the forefoot section of the footwear during the midstance and propulsive phases of gait,” as depicted in Figs. 9 and 13. *Id.*, 12:41-47, *see also id.*, 11:42-55.

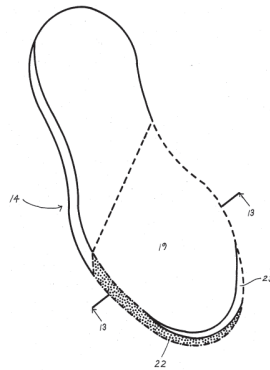


FIG. 9

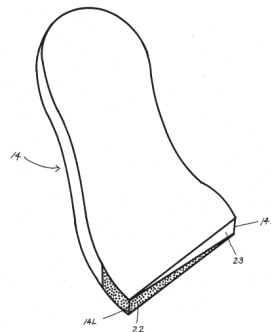


FIG. 13

60. In both embodiments, “the material employed on the lateral half of the forefoot is denser than the material used on the medial half of the forefoot.” Ex. 1008, 11:64-68. Talarico ‘911 also explains that the midsole has a consistent thickness throughout (*id.*, 12:1-3) and that “the rearfoot portion is of constant thickness across the width thereof.” *Id.*, 21:22-23.

G. “Conventional” Shoes

61. A POSITA would understand that shoes in general, including athletic shoes and golf shoes, have several traits and features that are “conventional” or “standard.” These conventional design traits include a heel platform that is substantially uniform around its perimeter, at least based on Patent Owner’s apparent interpretation of this limitation, as discussed in Section VI, above. Having a heel platform that is substantially uniform in height throughout, including around the heel platform’s perimeter, is standard shoe design, both before and after the priority date of the ’768 patent.

62. Conventional design traits also include a forefoot platform wherein, at the outer edge, the thickness at a position proximal to the heel platform is greater than the thickness at the toe portion. This limitation describes a shoe that includes a sole that is thicker at a position proximal to the front edge of the heel platform than at the toe portion. This sole design is common in almost all shoes, and has been a conventional design feature in athletic shoes long before the ’768 patent’s priority

date as it places the foot in a more natural position and is more comfortable for running, walking, and sports-related activities.

63. In fact, over the course of my career, the vast majority, if not all, of the shoes I designed or oversaw the design of had both of these features. For example, these features was included in the shoes I designed for Vans that were sold in the United States between 2002 and 2005, as depicted below.









64. In each of the Vans shoes I designed, the heel platform is substantially uniform in height on the inside of the shoe as well as the outside of the shoe.

65. A heel platform that is substantially uniform in height throughout, including around the heel platform's perimeter, and a sole that is thicker at a position proximal to the front edge of the heel platform than at the toe portion is also shown in the Nike running shoes from the 1970s, including the 1977 Boston running shoe, and 1971 Cortez, both of which I am familiar with and am aware of being sold in the United States during that time:

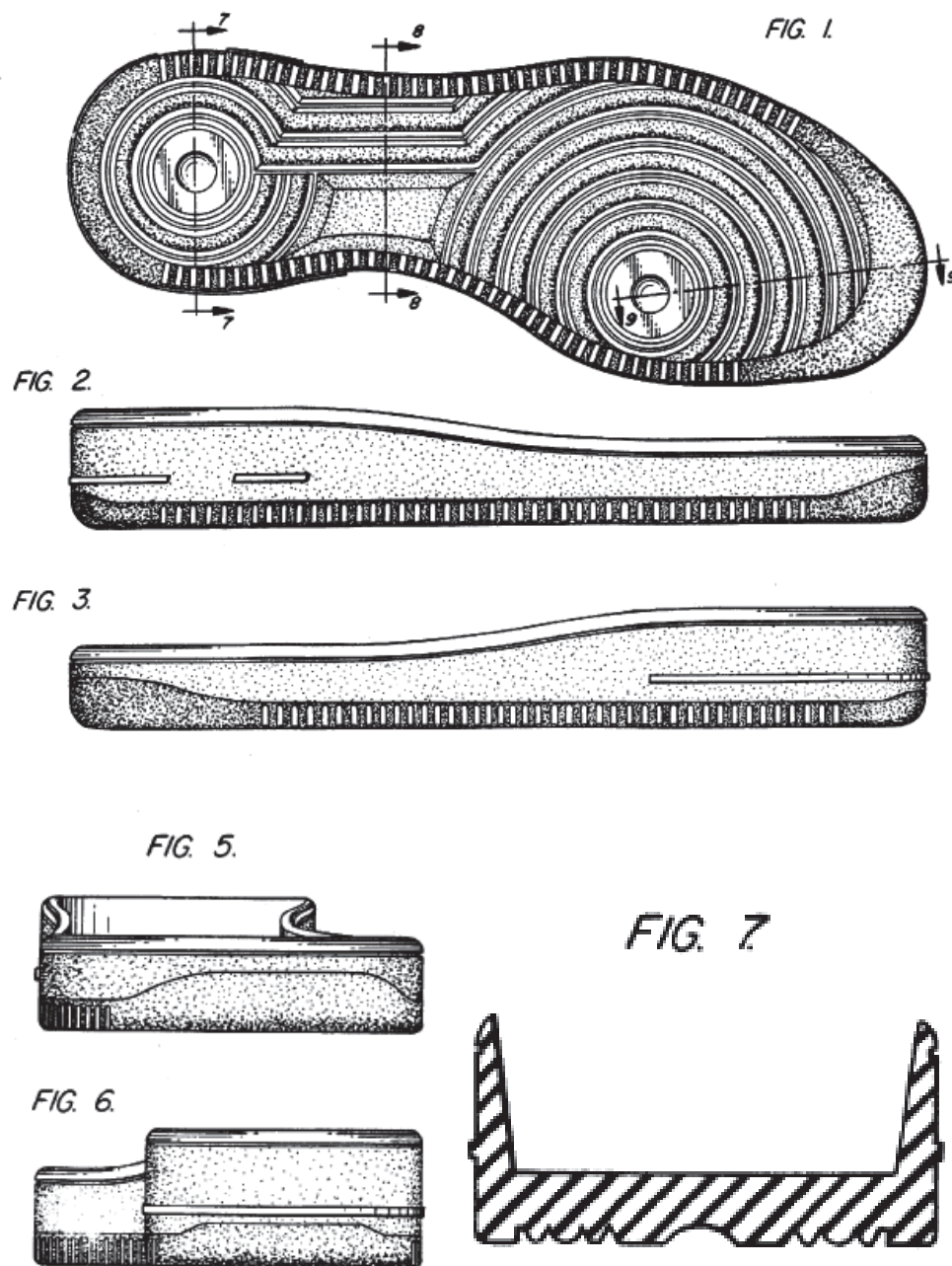


Ex. 1013.



Ex. 1018.

66. A heel platform that is substantially uniform in height throughout, including around the heel platform's perimeter, and a sole that is thicker at a position proximal to the front edge of the heel platform than at the toe portion, is also shown in Nike's U.S. Design Patent No. D275146, filed in 1982, which discloses the sole for Nike's "Air Force One" basketball shoe having a substantially uniform heel platform on both the inside and the outside of the shoe.



Ex. 1016.

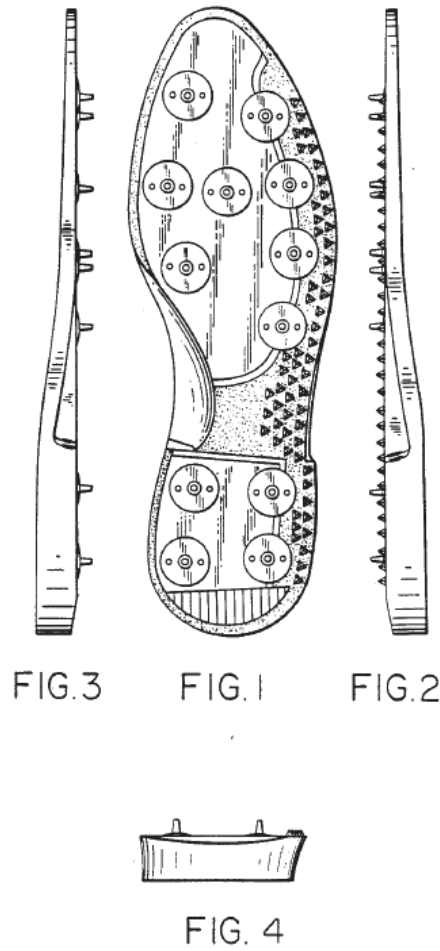
67. Having a heel platform that is substantially uniform in height throughout, including around the heel platform's perimeter, and a sole that is thicker

at a position proximal to the front edge of the heel platform than at the toe portion is also standard in golf shoes, as shown, for example, in the 1970 FootJoy Style 51409:



Exs. 1014, 1015.

68. See also the golf shoe sole disclosed in Tretorn's U.S. Design Patent No. D310294, filed in 1987:



Ex. 1017.

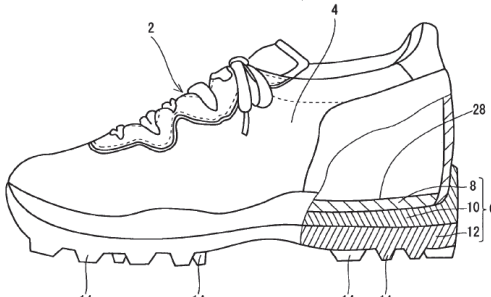
69. This fact is also confirmed by Giese, which discloses several designs showing a heel platform that is substantially uniform in height throughout, including around the perimeter, and a sole that is thicker at a position proximal to the front edge of the heel platform than at the toe portion, *e.g.* in Figs 1-5, 35-39 and 48-51, and states that, “historically, shoe bottoms [] consisted primarily of flat surfaces on both their top and bottom.” Ex. 1010, 1:10-27.

IX. OPINIONS ON UNPATENTABILITY

A. Ground 1: Claims 1-5, 8 are Obvious Based on Umezawa

70. It is my opinion that a POSITA would have found claims 1-5 and 8 obvious based on Umezawa.

(a) [1.0] An athletic shoe comprises:

U.S. Patent No. 11,375,768	Umezawa
[1.0] An athletic shoe comprises	Umezawa teaches and/or suggests an athletic shoe.  Fig. 1 “The present invention relates to shoes suitable for golf, tennis, squash, field hockey, basketball, aerobic exercise or the like.” Ex. 1006, ¶ 3.

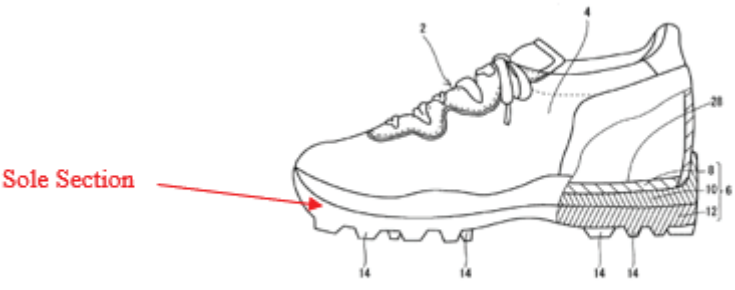
(b) [1.1] an upper section; and

U.S. Patent No. 11,375,768	Umezawa
[1.1] an upper section; and	Umezawa teaches and/or suggests a golf shoe having an upper section.

	“A golf shoe 2 illustrated in FIG. 1 comprises an upper 4 and a bottom part 6. The bottom part 6 has an insole 8, a midsole 10 and an outsole 12. The insole 8 is laminated with the midsole 10. The midsole 10 is laminated with the outsole 12. The outsole 12 has a number of projections 14 protruding downward on the lower surface. The material and structure for the upper 4 are equal to those of known upper. The material and structure for the insole 8 are equal to those of known insole. The material and structure for the outsole 12 are equal to those of known outsole.” <i>Id.</i>, ¶ 32.
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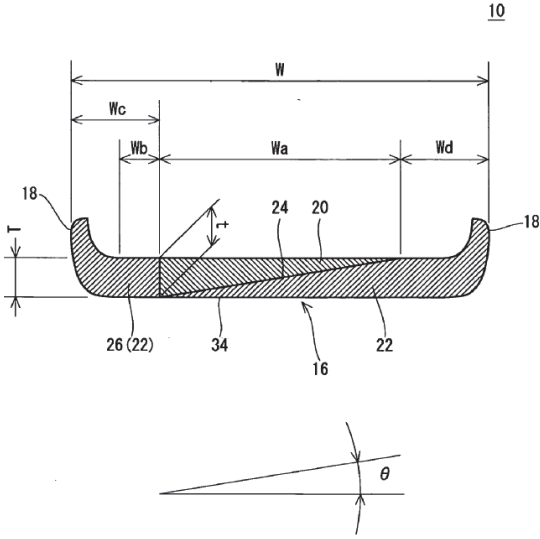
(c) [1.2] a sole section coupled to the upper section, wherein the sole section includes:

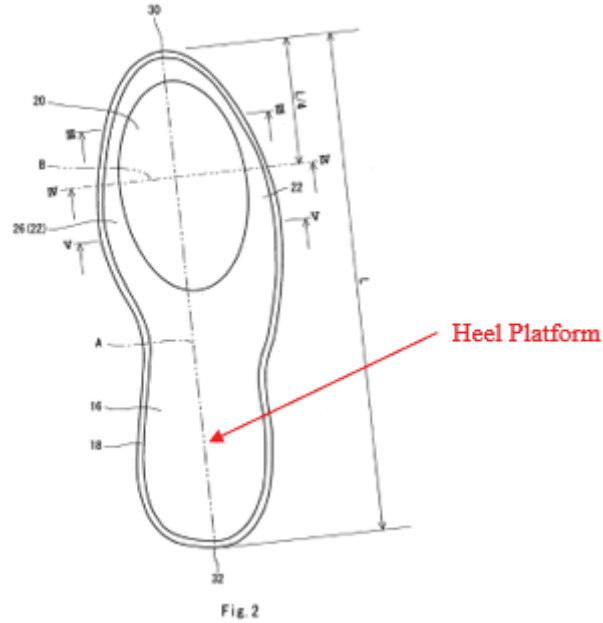
U.S. Patent No. 11,375,768	Umezawa
[1.2] a sole section coupled to the upper section, wherein the sole section includes:	Umezawa teaches and/or suggests a sole section coupled to the upper section of the shoe. As seen in the figure below, the sole section is connected to the upper section.

	 FIG. 1 “A golf shoe 2 illustrated in FIG. 1 comprises an upper 4 and a bottom part 6. The bottom part 6 has an insole 8, a midsole 10 and an outsole 12. The insole 8 is laminated with the midsole 10. The midsole 10 is laminated with the outsole 12. The outsole 12 has a number of projections 14 protruding downward on the lower surface. The material and structure for the upper 4 are equal to those of known upper. The material and structure for the insole 8 are equal to those of known insole. The material and structure for the outsole 12 are equal to those of known outsole.” <i>Id.</i>, ¶ 32.
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71. The ‘768 patent explains that the terms “operably coupled to”, “coupled to”, and/or “coupling” includes “direct coupling between items and/or indirect coupling between items via an intervening item (e.g., an item includes, but is not limited to, a component, an element, a circuit, and/or a module) where, for indirect coupling, the intervening item does not modify the information of a signal but may adjust its current level, voltage level, and/or power level. As may further be used herein, inferred coupling (i.e., where one element is coupled to another element by inference) includes direct and indirect coupling between two items in the same manner as ‘coupled to.’” ‘768 patent, 40:59-41:3.

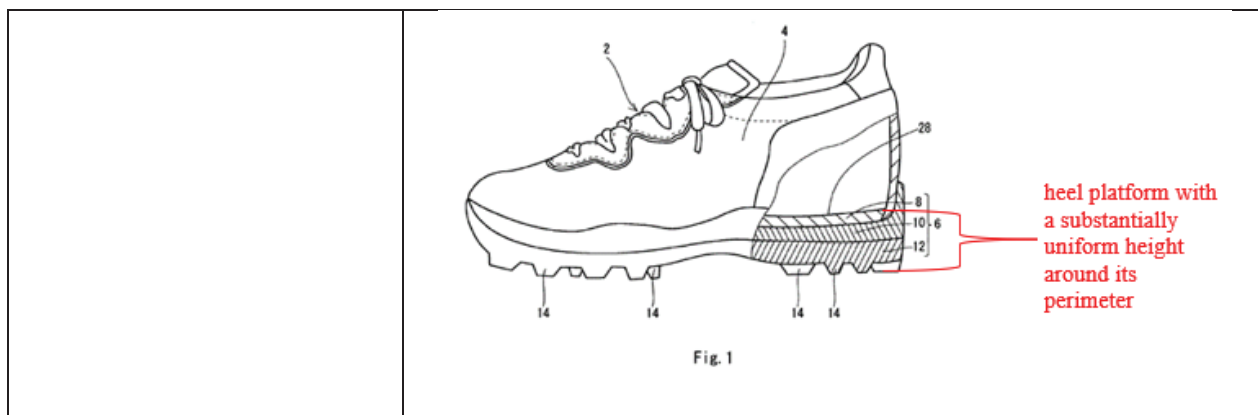
- (d) [1.3] a heel platform having a first height that is substantially uniform around a perimeter of the heel platform, wherein the heel platform is constructed of a first material having a first compression factor; and

U.S. Patent No. 11,375,768	Umezawa
[1.3] a heel platform having a first height that is substantially uniform around a perimeter of the heel platform, wherein the heel platform is constructed of a first material having a first compression factor; and	Umezawa teaches and/or suggests a heel platform having a first height that is substantially uniform around its perimeter, wherein the heel platform is constructed of a first material having a first compression factor.  Fig. 4 “The length designated by both-oriented arrow T in FIG. 4 is the thickness of the midsole 10. The thickness T is measured on a cross-section surface along the lateral line B. The thickness T is the maximum thickness among the parts except for the side wall 18. The thickness T is preferably 2 mm or more and more preferably 5 mm or more. The thickness T is preferably 25 mm or less, more preferably 20 mm or less and particularly preferably 15 mm or less.” <i>Id.</i>, ¶ 52.



“As shown in FIG. 2 to FIG. 5, the midsole 10 has a base 16 and a side wall 18 which is located on the outer edge of this base 16.” *Id.*, ¶ 33. This base includes the heel platform, as shown in Figs. 2-4.

“A golf shoe 2 illustrated in FIG. 1 comprises an upper 4 and a bottom part 6. The bottom part 6 has an insole 8, a midsole 10 and an outsole 12. The insole 8 is laminated with the midsole 10. The midsole 10 is laminated with the outsole 12. The outsole 12 has a number of projections 14 protruding downward on the lower surface. The material and structure for the upper 4 are equal to those of known upper. The material and structure for the insole 8 are equal to those of known insole. The material and structure for the outsole 12 are equal to those of known outsole.” *Id.*, ¶ 32.



72. A POSITA would understand that Umezawa’s disclosure of a golf shoe having a “known” or typical outsole, along with a midsole having a consistent-thickness heel section would result in a heel platform having a substantially uniform height around its perimeter, for example, as taught and/or suggested by Figure 1, and as discussed above.

73. As explained above, I understand that the perimeter of the heel platform is measured where the heel of the foot sits, not the outer perimeter of the shoe.

74. A POSITA would further understand that the heel disclosed in Umezawa would be made of a material inherently having some compression factor.

- (e) [1.4] a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor, wherein when the athletic shoe is worn by an athlete and weight of the athlete is applied to the athletic shoe, the second material compresses to a first level near an outer edge of the sole section and the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is greater than the first level of compression,¹

U.S. Patent No. 11,375,768	Umezawa
[1.4] a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor, wherein when the athletic shoe is worn by an athlete and weight of the athlete is applied to the athletic shoe, the second material compresses to a first level near an outer edge of the sole section and	Umezawa teaches and/or suggests a midsole with a forefoot platform made up of a second material having a low elastic part near the outer edge and a high elastic part near the inner edge, such that when an athlete wears the shoe, the high elastic part compresses more than the low elastic part. “This midsole 10 has a low elastic part 20 and a high elastic part 22. The elastic modulus of the low elastic part 20 is lower than that of the high elastic part 22. When a compression load is applied to the midsole 10, the low elastic part 20 is more easily deformed than the high elastic part 22. The low elastic part 20 may comprise two (2) or more parts having different elastic moduli. The high elastic part 22 may comprise two (2)

¹ While claim 1 recites that the heel platform is constructed of a “first material” and the forefoot platform of a “second material,” Athalonz contends that they can be the same material, see, e.g. Ex. 1012, Ex. E, pp. 38-53, accusing shoes with the heel platform and forefoot platform constructed of the same material(s) as infringing claim 1. I also have not reviewed anything in the patent or prosecution history that suggests that these have to be different materials. Thus, I understand the “first” material to be that which is used in the heel platform and the “second” material to be that which is used in the forefoot platform, which may be the same as, or different from, the first material.

the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is greater than the first level of compression,

or more parts having different elastic moduli.” *Id.*, ¶ 36.

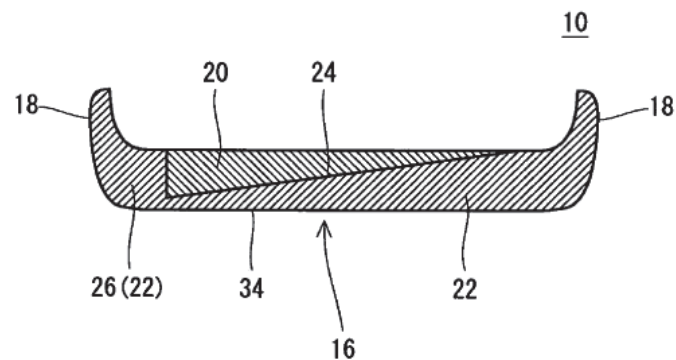
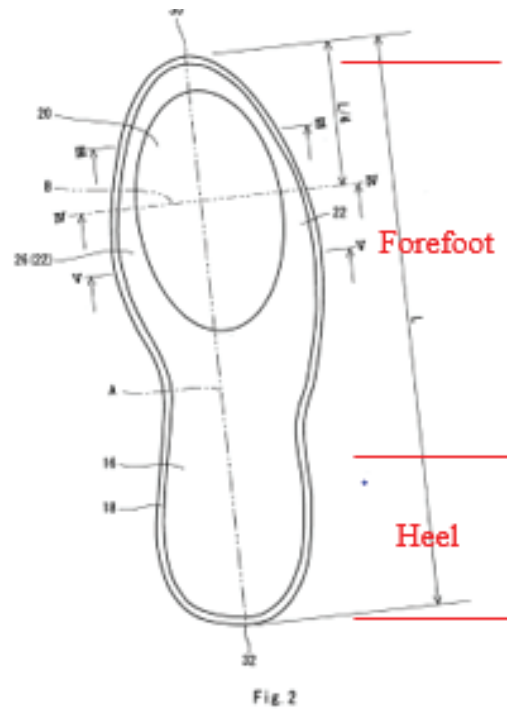


Fig. 3

“In this midsole 10, thickness of the low elastic part 20 and high elastic part 22 gradually changes along the inclined surface 24. Accordingly, the compression deformation in the midsole 10 changes continuously along the inclined surface 24 from the inside to the outside. The compression deformation does not change

rapidly. The continuous change contributes to stability of swing. A stable swing suppresses variation of flight distance. Furthermore, a stable swing suppresses variation of flight direction of a golf ball. The midsole 10 whose compression deformation changes continuously does not cause discomfort during walking.” *Id.*, ¶ 43.

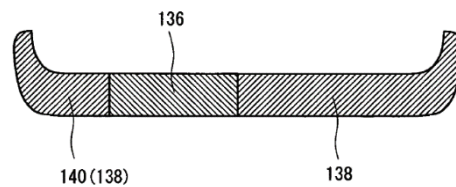


Fig. 15

“By performing the same procedures as those of Example 1 except for designing a cross-sectional shape of the midsole as shown in FIG. 15, a golf shoe according to Example 11 was obtained. This midsole has a low elastic part 136 and a high elastic part 138. The boundary between the low elastic part 136 and the high elastic part 138 is perpendicularly extended. The high elastic part 138 includes an inner high elastic part 140.” *Id.*, ¶ 83.

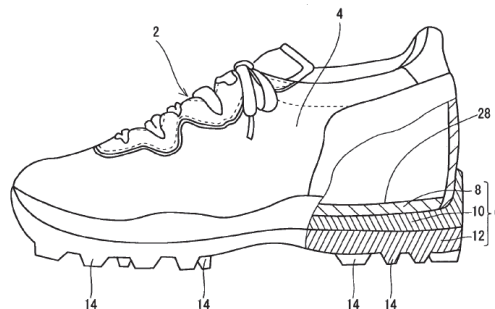


Fig. 1

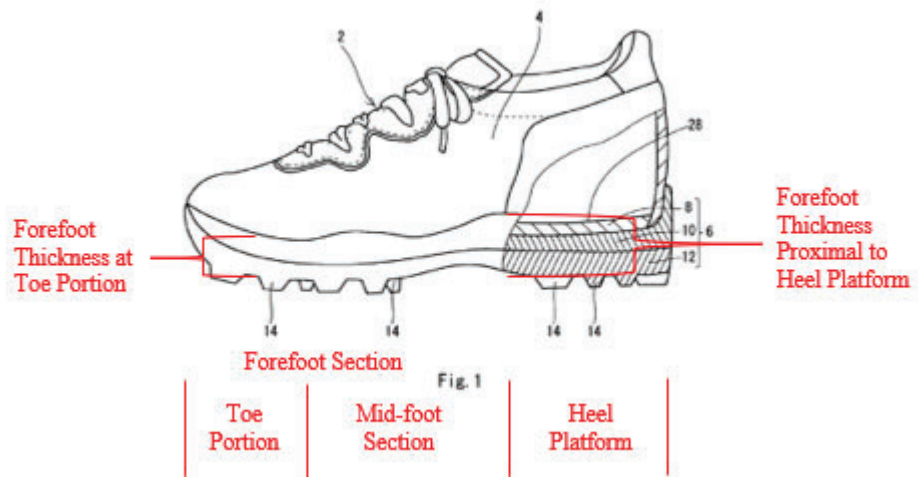
“When a golf player wears these golf shoes 2 and the body weight of the golf player is applied to the bottom part 6, this midsole 10 is compressed. Since the

	thickness of the low elastic part 20 is larger in the inside, the inside compression deformation is larger. Since the thickness of the high elastic part 22 is larger in the outside, outside compression deformation is smaller. In this midsole 10, applying the body weight generates unbalanced deformation. Deformation of the midsole 10 displaces the position of an upper surface 28 (FIG. 1) of the insole 8. The downward displacement of the upper surface 28 in the inside is larger than the downward displacement of the upper surface 28 in the outside. The insole 8 inclines upward from the inside to the outside. The foot of a golf player also inclines upward from the inside to the outside. The body weight of a golf player is mainly applied to the inside. As mentioned above, when a golf player swings, the golf player kicks the ground with the inside of the kicking foot. Since the foot is inclined, the golf player easily transfers the force to the ground. This midsole 10 is suitable for the right foot of a right-handed golf player. These golf shoes 2 contribute to generation of high head speed. The large head speed generates a long flight distance.” <i>Id.</i>, ¶ 38.
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- (f) [1.5] wherein the forefoot platform, at the outer edge, has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater than the second thickness.

U.S. Patent No. 11,375,768	Umezawa
[1.5] wherein the forefoot platform, at the outer edge, has a first thickness at a position proximal to the heel platform and	Umezawa teaches and/or suggests a forefoot platform wherein at the outer edge the thickness at a position proximal to the heel platform is greater than the thickness at the toe portion.

a second thickness at a toe portion, wherein the first thickness is greater than the second thickness.



Id., Fig. 1.

75. This limitation describes a shoe that includes a sole that is thicker at a position proximal to the front edge of the heel platform than at the toe portion. This sole design is common in almost all shoes, and has been a conventional design feature in athletic shoes, including in golf shoes, long before the ‘768 patent’s priority date as it places the foot in a more natural position and is more comfortable for running, walking, and sports-related activities. A POSITA would understand that Umezawa’s disclosure that the “material and structure for the outsole 12 are equal to those of known outsole(s)” (Ex. 1006, ¶ 32) would teach and or suggest to a POSITA that the sole is thicker at a position proximal to the front edge of the heel platform than at the toe portion.

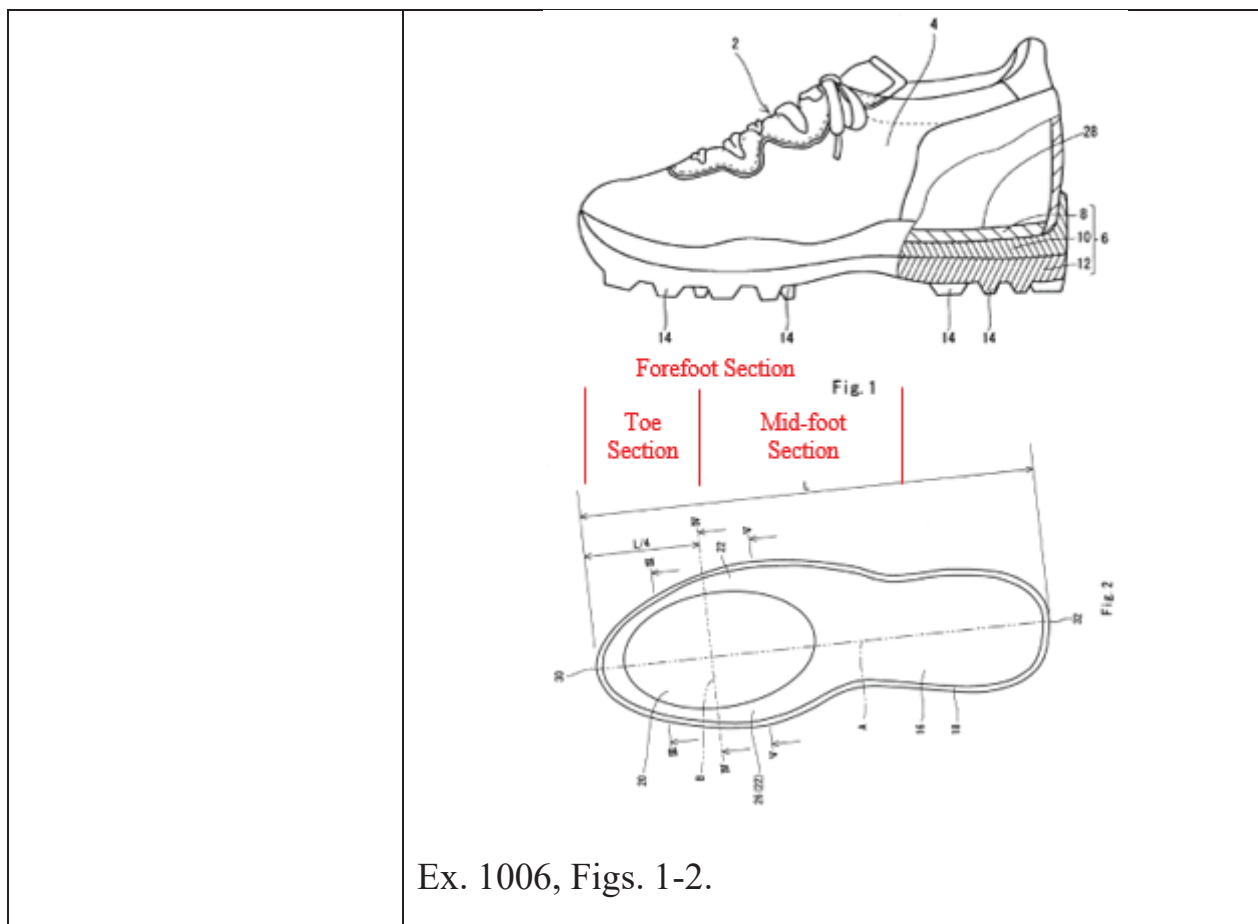
76. To the extent Umezawa does not expressly disclose this limitation, this feature is also present in Applicant admitted prior art. In the Background section of the ‘768 patent, the ‘768 patent explicitly discloses that “[i]n some designs of [prior

art] baseball spikes, the heel portion of the shoe may be higher than the toe portion of the shoe from a side perspective.” Ex. 1001, 1:63-2:6, 2:14-15. A POSITA would understand that a shoe having a higher heel portion than toe portion would include a sole that is thicker at a position proximal to the front edge of the heel platform than at the toe portion.

77. A POSITA would be motivated to include this feature described in the admitted prior art in the shoe disclosed in Umezawa to provide the known benefits, discussed above, and a POSITA would have had a reasonable expectation of success in doing so with little or no other modification to the other components of the shoe disclosed in Umezawa.

(g) [2] The athletic shoe of claim 1, wherein the forefoot section comprises: a mid-foot section; and a toe section proximal to the mid-foot section.

U.S. Patent No. 11,375,768	Umezawa
[2] The athletic shoe of claim 1, wherein the forefoot section comprises: a mid-foot section; and a toe section proximal to the mid-foot section.	Umezawa teaches and/or suggests a shoe wherein the forefoot section comprises a mid-foot section and a toe section proximal to the midfoot section.



- (h) [3] The athletic shoe of claim 1, wherein the second material comprises: a resilient material of varying density to provide a compressible gradient to provide the gradient compression factor.

78. See limitation 1.4 above, describing Umezawa's disclosure of a golf shoe having a midsole with a forefoot platform made up of a low elastic part and a high elastic part.

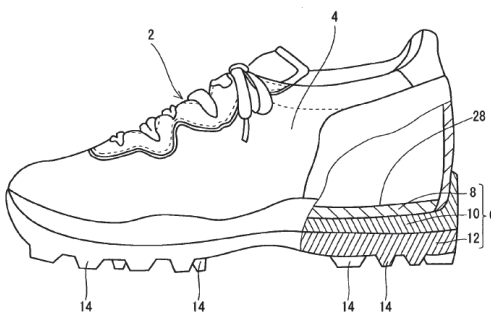
- (i) **[4] The athletic shoe of claim 3, wherein the resilient material comprises one or more of: a rubber, a gel, a foam, a synthetic material.**

U.S. Patent No. 11,375,768	Umezawa
[4] The athletic shoe of claim 3, wherein the resilient material comprises one or more of: a rubber, a gel, a foam, a synthetic material.	Umezawa teaches and/or suggests a midsole that comprises a synthetic material. “A typical base polymer of the midsole 10 is an ethylene-vinyl acetate (EVA). ... It is preferable that an EVA and a polyolefin are used in combination as a base polymer for the midsole. ... The preferable polyolefin include an ethylene-octane copolymer, an ethylene-butene copolymer, polypropylene and a polyethylene.” <i>Id.</i>, ¶ 34.

- (j) **[5] The athletic shoe of claim 1, wherein the second material comprises: a plurality of materials configured to provide a shape of the forefoot platform and to provide the gradient compression factor, wherein a first material of the plurality of materials is one of a foam, a soft rubber, memory foam, a housing that holds a liquid, and a material that compresses under pressure and substantially returns to its uncompressed shape when the pressure is removed.**

79. See limitation 1.4 above, describing Umezawa’s disclosure of a golf shoe having a midsole with a forefoot platform made up of a low elastic part and a high elastic part configured to provide a shape of the forefoot platform and the gradient compression factor, and see claim 4 above describing the forefoot platform materials, including EVA, that a POSITA would understand compresses under pressure and returns to its uncompressed shape when the pressure is removed.

- (k) [8] The athletic shoe of claim 1, wherein the sole section comprises: an insole; a mid-sole; and an out-sole.

U.S. Patent No. 11,375,768	Umezawa
[8] The athletic shoe of claim 1, wherein the sole section comprises: an insole; a mid-sole; and an out-sole.	Umezawa teaches and/or suggests a golf shoe having a sole section that includes an insole, midsole and an outsole.  Fig. 1 “A golf shoe 2 illustrated in FIG. 1 comprises an upper 4 and a bottom part 6. The bottom part 6 has an insole 8, a midsole 10 and an outsole 12. The insole 8 is laminated with the midsole 10. The midsole 10 is laminated with the outsole 12.” <i>Id.</i>, ¶ 32.

B. Ground 2: Claims 1-5, 8 are Obvious Over Umezawa in View of Gallas

80. Claim 1 recites a heel platform “having a first height that is substantially uniform around a perimeter of the heel platform,” and a forefoot platform that “at the outer edge, has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater than the second thickness.” To the extent Umezawa does not expressly

disclose these limitations, these claims would be obvious based on Umezawa in view of Gallas.

Overview of the Combination

81. The combination of Umezawa and Gallas renders claims 1-5 and 8 obvious. To the extent Umezawa does not expressly disclose that the heel platform has a height that is substantially uniform around its perimeter, and/or a forefoot platform that has greater thickness at its outer edge at a position proximal to the heel platform than at the toe portion, Gallas does.

Rationale (Motivation) Supporting Obviousness

82. It would have been obvious to incorporate a sole element wherein the forefoot platform is thicker at a position proximal to the heel platform than at the toe portion, and a heel platform that has a substantially uniform around its perimeter, like that in Gallas, into the shoe disclosed in Umezawa. A POSITA would have found it obvious to have combined the teaching of Umezawa and Gallas with a predictable outcome.

83. Umezawa and Gallas are both in the same field (athletic shoe design, including shoes specifically designed for golf), and both disclose similar improvements over typical shoes, namely, the design of golf shoes aimed at improving a player's stance and weight distribution. A POSITA would have naturally looked to Gallas when considering ways to improve Umezawa's sole

design. A POSITA would understand that providing a drop in height from the heel of the shoe to the toe was common in shoe design and provides several benefits. For example, Gallas explains that such a design improves the wearer's weight distribution, spine angle, knee flex, and athletic performance. Ex. 1020, ¶¶ 0012, 0017, 0018. Furthermore, including a heel platform that is substantially uniform in height around its perimeter, as opposed to a heel platform that is angled, either from front to back or from one side to the other, provides a flat surface for the wearer's heel which provides additional stability, e.g., during the player's upswing, when weight is placed on the heels. Ex. 1020, ¶ 0017.

Reasonable Expectation of Success

84. A POSITA would have had a reasonable expectation of success in incorporating a sole element having a forefoot platform that is thicker at a position proximal to the heel platform than at a toe portion and a heel platform that has a substantially uniform around its perimeter, like that in Gallas, into the shoe disclosed in Umezawa. Umezawa's sole, including the forefoot platform and heel, could easily be modified to include the sole shape disclosed in Gallas to provide the benefits described above. The art was relatively predictable in the relevant timeframe. A POSITA would have also been able to make any necessary modifications to the shoe or shoe components to implement this Ground.

Analogous Art

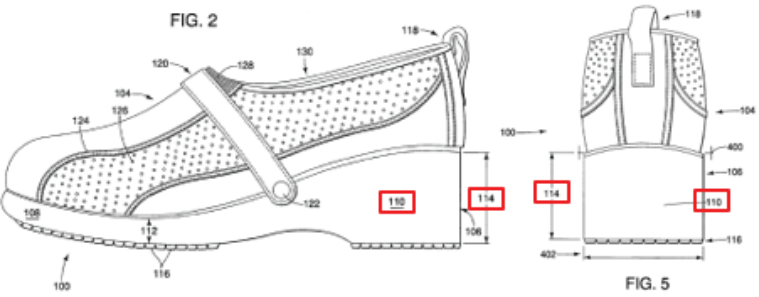
85. Umezawa and Gallas are analogous art because they are in the same field as the '768 patent (Ex. 1001,'768 patent at Abstract, Title), (Ex. 1006, Umezawa at Abstract, Title), (Ex. 1020, Gallas at Abstract, Title), and all three relate to shoe designs for improving performance while playing golf.

Claims 1-5 and 8 are Obvious Based on Umezawa in View of Gallas

a. Claim 1 – Limitations [1.0]-[1.2] and [1.4]

86. Umezawa teaches and/or suggests limitations [1.0]-[1.2] and [1.4] of independent claim 1 as described in Ground 2 above.

b. Claim 1 – Limitation [1.3] a heel platform having a first height that is substantially uniform around a perimeter of the heel platform, wherein the heel platform is constructed of a first material having a first compression factor; and

U.S. Patent No. 11,375,768	Gallas
[1.3] a heel platform having a first height that is substantially uniform around a perimeter of the heel platform, wherein the heel platform is constructed of a first material having a first compression factor; and	Gallas teaches and/or suggests a heel platform 110 that has a substantially uniform height around a perimeter of the heel platform that is constructed of a material having a compression factor, as shown in Figures 2 and 5.  Gallas teaches that the heel portion 110 has a constant elevation 114 throughout:

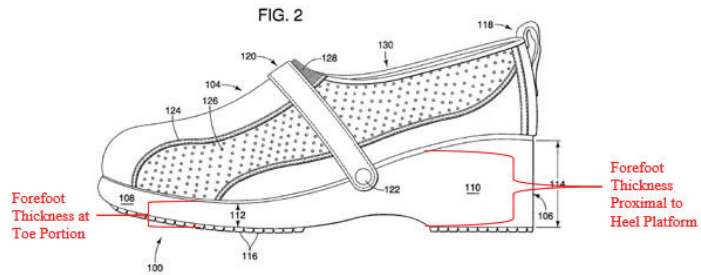
	“the rear portion 110 may have an elevation 114 which is greater than the elevation 112 of the front portion 108, for example, the rear portion 110 may have an elevation of approximately 0.50 inches to approximately 5 inches, or may have a elevation of approximately 1.0 inches to approximately 3.0 inches, or may have a elevation of approximately 1.5 inches to approximately 2.5 inches, in each case the elevation of the rear portion 110 exceeding the elevation of the front portion 108. As an example, the elevation of the rear portion 110 may exceed the elevation of the front portion 108 by about 25%. In that case, if the elevation of the front portion 108 is 0.5 inches, the elevation of the rear portion 110 may be about 0.625 inches.” Ex. 1020, ¶ 0020; <i>see also</i> ¶¶ 0028, 0029.
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87. A POSITA would further understand that the heel disclosed in Gallas would be made of a material inherently having some compression factor.

- c. Claim 1 – Limitation [1.5] wherein the forefoot platform, at the outer edge, has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater than the second thickness.**

U.S. Patent No. 11,375,768	Gallas
[1.5] wherein the forefoot platform, at the outer edge, has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater	Gallas teaches and/or suggests a forefoot platform that, at an outer edge, has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater than the second thickness, as shown in Figure 2.

than the second thickness.



“The shoe may position the foot such that the heel of the foot is elevated to a height above the front or toes of the foot. By elevating the heel of the foot above the toes, a golfer may be able to create the proper knee flex, while easing the weight transfer needed to make an athletic move, thereby enhancing contact and swing.” Ex. 1020, ¶ 0012.

“[T]he rear portion 110 may have an elevation 114 which is greater than the elevation 112 of the front portion 108.” *Id.*, ¶ 0021.

Gallas also explains that such a design improves the wearer’s weight distribution, spine angle, knee flex, and athletic performance. Ex. 1020, ¶¶ 0012, 0017-0019.

d. Claims 2-5, 8

88. Umezawa teaches and/or suggests the limitations of claims 2-5 and 8, as described in Ground 1 above.

C. Ground 3: Claims 1-5, 8 are Obvious Based on Norton

89. It is my opinion that a POSITA would have found claims 1-5 and 8 obvious based on Norton.

(a) [1.0] An athletic shoe comprises:

U.S. Patent No. 11,375,768	Norton
[1.0] An athletic shoe comprises	To the extent the preamble is deemed limiting, Norton teaches and/or suggests athletic shoes. “The invention relates to sole elements and methods for manufacturing sole elements for shoes, in particular for sport shoes, with a specific density distribution in a transverse and/or longitudinal direction. The methods include the steps of manufacturing a sole element preform from a polymer material with a thickness varying in the transverse and/or longitudinal direction depending on the desired density distribution and the press-forming of the sole element preform in a forming tool to form the finished sole element from the sole element preform.” Ex. 1007, Abstract.

(b) [1.1] an upper section; and

U.S. Patent No. 11,375,768	Norton
[1.1] an upper section; and	Norton teaches and/or suggests athletic shoes having an upper section. “In one embodiment, the invention relates to an article of footwear including an upper and a sole including a sole element manufactured in accordance with the preceding methods.” Ex. 1007, 4:59-62.

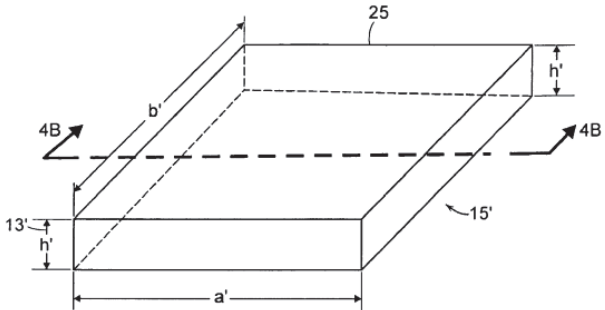
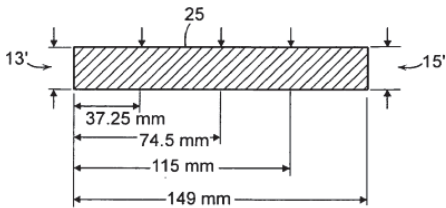
(c) [1.2] a sole section coupled to the upper section, wherein the sole section includes:

U.S. Patent No. 11,375,768	Norton
[1.2] a sole section coupled to the upper section, wherein the sole section includes:	Norton teaches and/or suggests athletic shoes having a sole section coupled to the upper section. “In one embodiment, the invention relates to an article of footwear including an upper and a sole including a sole element manufactured in accordance with the preceding methods.” Ex. 1007, 4:59-62.

90. The ‘768 patent explains that the terms “operably coupled to,” “coupled to,” and/or “coupling” includes “direct coupling between items and/or indirect coupling between items via an intervening item (e.g., an item includes, but is not limited to, a component, an element, a circuit, and/or a module) where, for indirect coupling, the intervening item does not modify the information of a signal but may adjust its current level, voltage level, and/or power level. As may further be used herein, inferred coupling (i.e., where one element is coupled to another element by inference) includes direct and indirect coupling between two items in the same manner as ‘coupled to.’” ‘768 patent, 40:59-41:3.

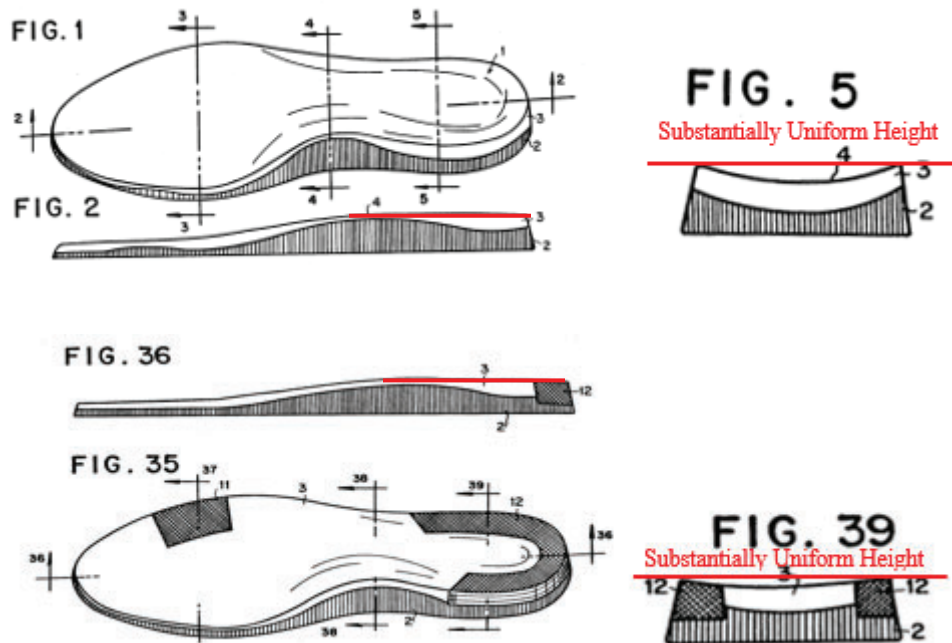
91. To the extent Norton fails to explicitly disclose that the sole section is coupled to the upper, a POSITA would understand an upper coupled to the sole section to be necessarily present in the disclosed athletic shoes.

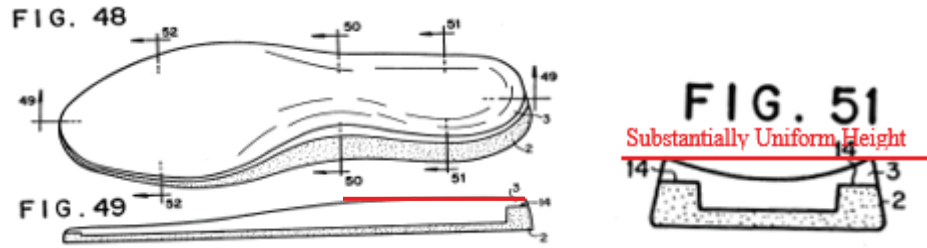
- (d) [1.3] a heel platform having a first height that is substantially uniform around a perimeter of the heel platform, wherein the heel platform is constructed of a first material having a first compression factor; and

U.S. Patent No. 11,375,768	Norton
[1.3] a heel platform having a first height that is substantially uniform around a perimeter of the heel platform, wherein the heel platform is constructed of a first material having a first compression factor; and	Norton teaches and/or suggests a sole element with a consistent thickness throughout, including in the heel section, as shown in Figs. 4A, 4B.  FIG. 4A  FIG. 4B “As depicted in FIG. 4A, the sole element 25 has a width a' of about 149 mm, a length b' of about 250 mm and a constant height h' of about 13 mm. FIG. 4B shows again a vertical section through the finished sole element 25 in accordance with the invention.” <i>Id.</i>, 7:39-43.

92. Norton also teaches that the inventive sole element may only be used in parts of the forefoot (*id.*, 5:65-67) and a POSITA would understand that a typical athletic shoe has a heel platform that is consistent in height throughout. This, in combination with Norton's disclosure of an insole having a consistent-thickness heel section would lead a POSITA to conclude that Norton's heel platform has a substantially uniform height around its perimeter.

93. In addition, Giese (incorporated by reference into Norton) discloses several shoe embodiments wherein the heel platform is substantially uniform in height around its perimeter. Ex. 1010, Figs. 1-5, 36-39, 48-51; 7:16-18.





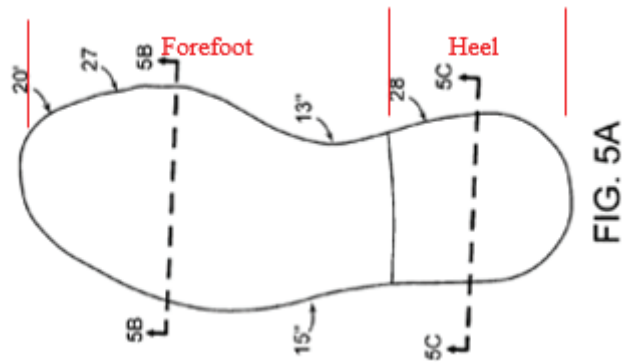
94. Giese also acknowledges that, “historically, shoe bottoms [] consisted primarily of flat surfaces on both their top and bottom.” *Id.*, 1:10-27.

95. A POSITA would further understand that the heel disclosed in Norton would be made of a material inherently having some compression factor.

- (e) [1.4] a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor, wherein when the athletic shoe is worn by an athlete and weight of the athlete is applied to the athletic shoe, the second material compresses to a first level near an outer edge of the sole section and the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is greater than the first level of compression,

U.S. Patent No. 11,375,768	Norton
[1.4] a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor, wherein when the athletic shoe is worn by an athlete and weight of the athlete is applied	Norton teaches and/or suggests a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor.

to the athletic shoe, the second material compresses to a first level near an outer edge of the sole section and the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is greater than the first level of compression,



Norton discloses sole elements for sports shoes with a lateral density variation made up of a material that is “pressure forming into the desired density distribution,” as shown in Figs. 3B-4B. Ex. 1007, 3:14-15.

“In one aspect, an embodiment of the invention relates to a method of manufacturing a sole element for a shoe, where the sole element has a varying density distribution in at least one direction, for example a transverse and/or longitudinal direction. The method includes manufacturing a sole element preform from a polymer material with a thickness varying in the transverse and/or longitudinal direction depending on the specific density distribution desired and press-forming the sole element preform in a forming tool to form the finished sole element from the sole element preform.” Ex. 1007, 3:33-43.

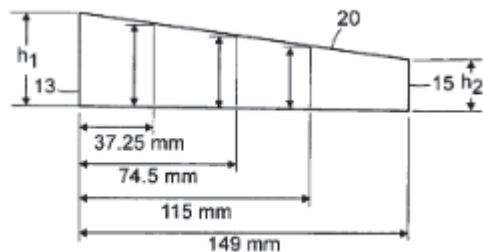


FIG. 3B

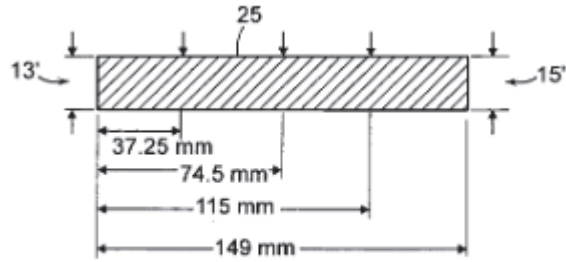


FIG. 4B

Referencing Figure 4B, Norton explains that “[i]f the hardness of the resulting sole element 25 is measured with reference to the distance from the left side 13’, the following values shown in Table 2 are obtained:”

TABLE 2

Hardness distribution of the shaped sole unit from the medial side 13’ to the lateral side 15’ in one embodiment

DISTANCE FROM THE MEDIAL SIDE [MM]	HARDNESS [C]
0	60.0
37.25	57.5
74.50	55.0
115.0	52.5
149.0	50.0

Id., 7:44-58.

“The locally varying hardness of the sole unit 25 can be explained by the surplus of material on the left side 13, which is compressed more than the material on the right side 15 during the final forming step in such a way that a continuously varying density distribution is obtained in the sole unit 25. The resulting density, in turn, influences the hardness and therefore the elasticity of the sole unit 25.” *Id.*, 8:12-18.

“In various embodiments of the foregoing aspects, the method includes the step of supplying heat during the press-forming. Density can increase gradually from a lateral side of the sole element to a medial side of the sole element or density can decrease gradually from a lateral side of the sole element to a medial side of the sole element.” *Id.*, 4:7-13.

96. A POSITA would understand that the varied density across the forefoot platform disclosed in Norton would cause the sole elements to compress more near their inner edge than near their outer edge when the weight of an athlete is applied to the shoe.

97. To the extent needed, it also would have been obvious to a POSITA to incorporate the heel designs disclosed in Giese that have a substantially uniform height into the shoes disclosed in Norton that have varying density forefoots without altering the forefoot, or the rest of the shoe's, design. Since Giese is incorporated by reference into Norton, a POSITA would naturally have considered Giese's teachings in combination with those in Norton.

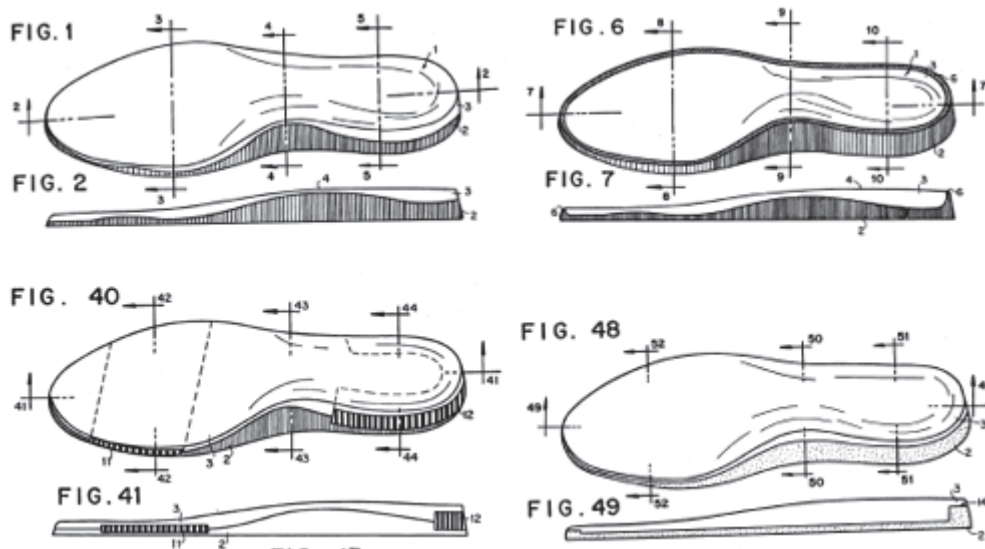
(f) [1.5] wherein the forefoot platform, at the outer edge, has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater than the second thickness.

98. Norton teaches and/or suggests a forefoot platform wherein, at the outer edge, the thickness at a position proximal to the heel platform is greater than the thickness at the toe portion. This limitation describes a shoe that includes a sole that is thicker at a position proximal to the front edge of the heel platform than at the toe portion. This sole design is common in almost all shoes, and has been a conventional design feature in athletic shoes long before the '768 patent's priority date as it places the foot in a more natural position and is more comfortable for running, walking,

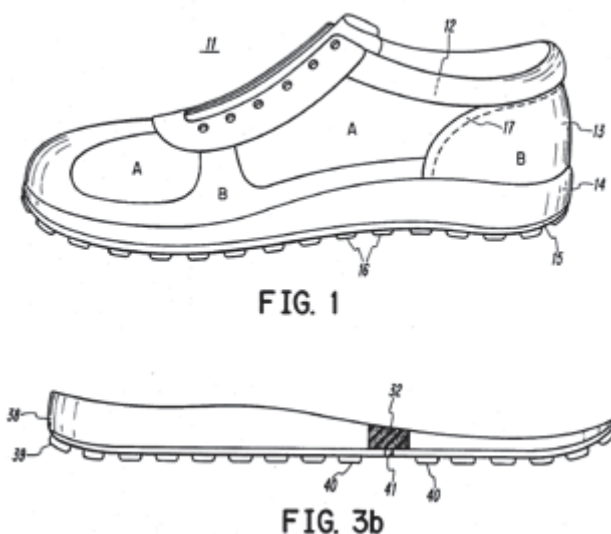
and sports-related activities. A POSITA would understand that Norton's disclosure that the inventive sole element may only be used in parts of the forefoot (Ex. 1007, 5:65-67) would teach and/or suggest to a POSITA that the remainder of the sole is of a conventional design, including being thicker at a position proximal to the front edge of the heel platform than at the toe portion.

99. The Giese and Matthews references, incorporated into Norton, also disclose a forefoot platform wherein at the outer edge the thickness at a position proximal to the heel platform is greater than the thickness at the toe portion.

100. Giese discloses that the "lower layer 2 is shaped to be thicker in areas where the wearer's foot will need extra support," such as at the forefoot platform at a position proximal to the heel platform, as shown, e.g., in Figs. 1-2, 6-7, 40-41, 48-49. Ex. 1010, 6:60-7:2.



101. Mathews similarly discloses a forefoot platform wherein at the outer edge the thickness at a position proximal to the heel platform is greater than the thickness at the toe portion. Ex. 1009, Figs. 1, 3B.

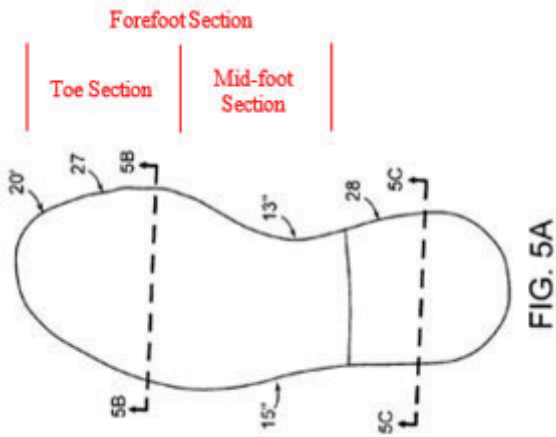


102. This feature is also present in Applicant admitted prior art. In the Background section of the '768 patent, the '768 patent explicitly discloses that "[i]n some designs of [prior art] baseball spikes, the heel portion of the shoe may be higher than the toe portion of the shoe from a side perspective." Ex. 1001, 1:63-2:6, 2:14-15. A POSITA would understand that a shoe having a higher heel portion than toe portion would include a sole that is thicker at a position proximal to the front edge of the heel platform than at the toe portion.

103. A POSITA would be motivated to include this feature described in the admitted prior art, Giese and Matthews in the shoe disclosed in Norton to provide the known benefits, discussed above, and a POSITA would have had a reasonable

expectation of success in doing so with little or no other modification to the other components of the shoe disclosed in Norton.

- (g) [2] The athletic shoe of claim 1, wherein the forefoot section comprises: a mid-foot section; and a toe section proximal to the mid-foot section.

U.S. Patent No. 11,375,768	Norton
[2] The athletic shoe of claim 1, wherein the forefoot section comprises: a mid-foot section; and a toe section proximal to the mid-foot section.	Norton teaches and/or suggests a forefoot section comprising a midfoot section and a toe section.  FIG. 5A

- (h) [3] The athletic shoe of claim 1, wherein the second material comprises: a resilient material of varying density to provide a compressible gradient to provide the gradient compression factor.

104. See limitation 1.4 above, describing the sole elements having a gradient compression factor disclosed in Norton.

- (i) **[4] The athletic shoe of claim 3, wherein the resilient material comprises one or more of: a rubber, a gel, a foam, a synthetic material.**

U.S. Patent No. 11,375,768	Norton
[4] The athletic shoe of claim 3, wherein the resilient material comprises one or more of: a rubber, a gel, a foam, a synthetic material.	Norton teaches and/or suggests a midsole that comprises a synthetic material and/or a foam. “The sole element includes a homogeneous polymer material including a portion having a locally varying density. The homogeneous polymer material may include ethylene vinyl acetate.” Ex. 1005, 3:59-61. “One embodiment of a preform 20 in accordance with the invention is shown in FIGS. 3A and 3B. In one embodiment, the preform is made from ethylene vinyl acetate (EVA); however, other foamed materials are also useful, such as polyurethane (PU).” <i>Id.</i>, 6:56-60.

- (j) **[5] The athletic shoe of claim 1, wherein the second material comprises: a plurality of materials configured to provide a shape of the forefoot platform and to provide the gradient compression factor, wherein a first material of the plurality of materials is one of a foam, a soft rubber, memory foam, a housing that holds a liquid, and a material that compresses under pressure and substantially returns to its uncompressed shape when the pressure is removed.**

105. See limitation 1.4 above, describing the sole elements configured to provide a shape of the forefoot platform and the gradient compression factor disclosed in Norton, and see claim 4 above describing the forefoot platform materials, including EVA, that a POSITA would understand compresses under pressure and returns to its uncompressed shape when the pressure is removed, and

foam. It would have been obvious to use one or a plurality of materials to achieve the benefits of the gradient compression factor, as disclosed in both Norton and in Talarico '911, incorporated by reference in Norton. A person of ordinary skill in the art would have known that it could have chosen one or several materials for obtaining the increasing compression gradient across the forefoot platform, for example, by meshing varying amounts of two materials across the width of the platform. This amounts to one of a limited number of design choices for obtaining the benefits of the gradient compression recognized in the prior art. This is especially true based on Norton's incorporation by reference of Talarico '911, which expressly discloses the use of two materials to provide a gradient compression factor, as described below. In view of these disclosures, it would have been obvious to use one or a plurality of materials to achieve the benefits of gradient compression.

(k) [8] The athletic shoe of claim 1, wherein the sole section comprises: an insole; a mid-sole; and an out-sole.

106. See limitation 1.2 above, describing Norton's disclosure of athletic shoes having a sole section that includes an insole, midsole and/or an outsole.

D. Ground 4: Claims 1-5, 8 are Obvious Over Won in View of Norton

107. Claim 1 recites a "forefoot platform [] constructed of a second material having a gradient compression factor." To the extent this limitation requires that the forefoot platform become "increasingly less compressible" from its inner edge to its

outer edge, as discussed in Section VI.A, above, these claims would be obvious based on Won in view of Norton.

Overview of the Combination

108. The combination of Won and Norton renders claims 1-5 and 8 obvious. Won discloses a golf shoe wherein the sole is constructed of two materials of varying density side-by-side, but does not explicitly disclose a forefoot platform that becomes “increasingly less compressible” from its inner edge to its outer edge. Norton, however, does.

Rationale (Motivation) Supporting Obviousness

109. It would have been obvious to substitute a sole element constructed of a single material having a varying density distribution, as taught by Norton, into the shoe disclosed in Won. A POSITA would have found it obvious to have combined the teaching of Won and Norton with a predictable outcome.

110. Won and Norton are both in the same field (shoe design), and both disclose similar improvements over typical shoes, namely, the use of one or more materials to provide a variable compression sole. A POSITA would have naturally looked to Norton when considering ways to improve the Won sole design.

111. Norton identifies several prior art shoes having varied compression soles that consist of two materials used side-by-side (Ex. 1007, 1:63-2:50, Figs. 11A-11C, 12), like that disclosed in Won, and suggests several advantages it’s single-

material sole provides. For example, Norton explains that its prescribed manufacturing technique avoids the “severe disadvantage” associated with connecting two different materials of different densities together, which “requires not only increased labor consumption, but also leads to interconnection problems, since the two materials with different densities have to be compatible with each other.” *Id.*, 2:54-67; 3:9-24. Norton teaches a single-material sole to overcome these problems:

One aspect of one embodiment of the present invention is to not use two different materials with different densities to create the density variation over the sole element and to connect these materials subsequently, but to use a single material being supplied as a preform and having a thickness distribution that is transformed by pressure forming into the desired density distribution.

Id., 3:9-15.

112. With Norton’s technique, “[d]ensity can increase gradually from a lateral side of the sole element to a medial side of the sole element or density can decrease gradually from a lateral side of the sole element to a medial side of the sole element. ... Sole elements manufactured by such a method can be adapted to different sports and to the different anatomy of a respective wearer.” Ex. 1007, 4:7-21.

113. A POSITA would also have understood that a sole that is increasingly less compressible from the inside to the outside of the forefoot to provide several benefits. For example, as Norton explains, providing a compression gradient allows

for more effective treatment of foot pronation and supination by providing a sole with different hardnesses, and a locally changing and specifically adapted density distribution. Ex. 1007, 6:33-38; 9:30-34. A compression gradient also provides “a more even and gradual alteration of the weight-bearing gravitational forces as they are delivered and directed across the forefoot section of the footwear during the midstance and propulsive phases of gait” which is “generally preferred to the medial and lateral half dual-density methods.” Ex. 1008, 12:41-47.

Reasonable Expectation of Success

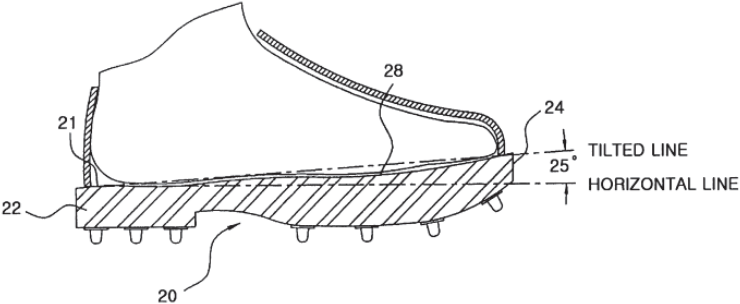
114. A POSITA would have had a reasonable expectation of success in incorporating a sole element constructed of a single material having a varying density distribution, like that in Norton, into the shoe disclosed in Won. Won’s multi-material sole or midsole could easily be replaced with a single material sole element as disclosed in Norton to provide a similar compressibility difference between the inner and outer edge of the forefoot, but also provide the additional benefits described above. In fact, Norton identified similar dual-material soles like that disclosed in Won, and suggested its manufacturing technique would be suitable to replace such a sole with one made from a single material, as discussed above. *See, e.g.* Ex. 1007, 2:20-3:24, Figs. 11A-12. The art was relatively predictable in the relevant timeframe. A POSITA would also have been able to make any necessary modifications to the shoe or shoe components to implement this Ground.

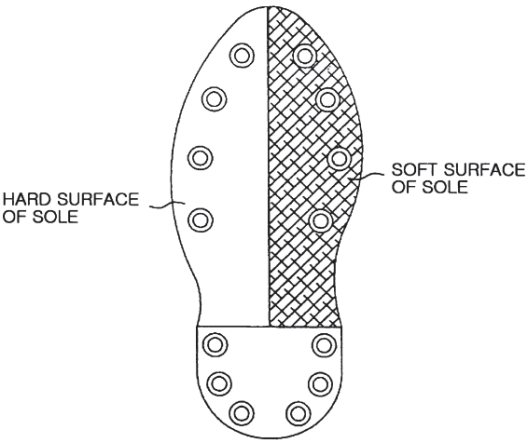
Analogous Art

115. Norton and Won are analogous art because they are in the same field as the '768 patent (Ex. 1001,'768 patent at Abstract, Title) (Ex. 1007, Norton at Abstract, Title) (Ex. 1005, Won at Abstract, Title), and all three relate to shoe designs that incorporate compressibility differentials within the sole.

Claims 1-5 and 8 are Obvious Based on Won in View of Norton

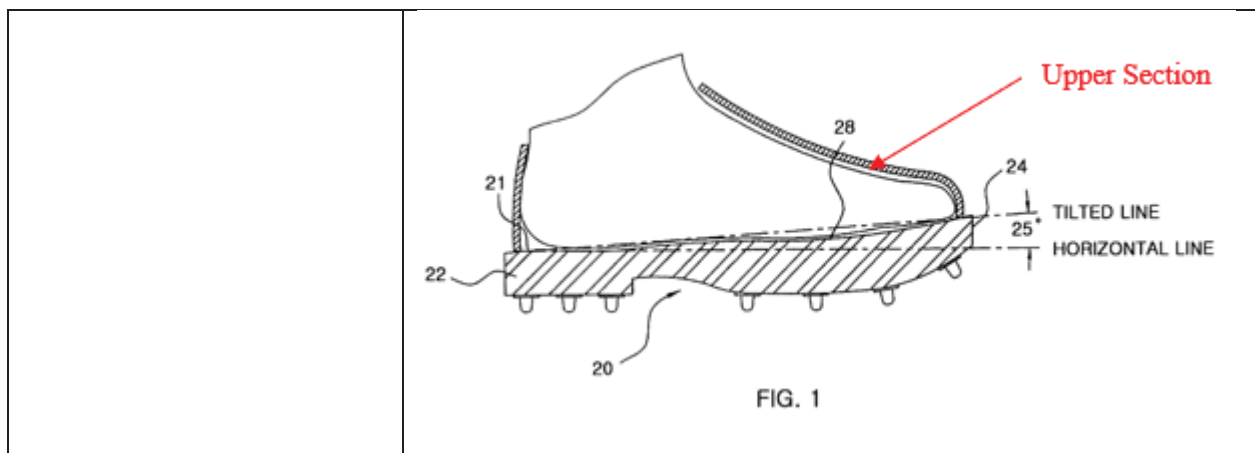
(a) [1.0] An athletic shoe comprises:

U.S. Patent No. 11,375,768	Won
[1.0] An athletic shoe comprises	To the extent the preamble is deemed limiting, Won teaches and/or suggests an athletic shoe. Won discloses a novel design for a golf shoe.  FIG. 1

	 FIG. 5 “This invention is related to a golf shoe that naturally shifts the center of weight into a heel portion and cause smooth swing. The golf shoes according to this invention comprises a sole having a heel portion (30), a toe portion (34) formed continuously forwardly from the heel portion (30) and an intermediate metatarsal portion (32) formed between the heel portion (30) and the toe portion (34), wherein the toe portion (34) is angled 1~5° upward from a horizontal line taking the intermediate metatarsal portion (32) as pivot point and the heel portion is angled -7~7° from the horizontal line taking the intermediate metatarsal portion as pivot point.” Ex. 1005, Abstract.
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(b) [1.1] an upper section; and

U.S. Patent No. 11,375,768	Won
[1.1] an upper section; and	Won teaches and/or suggests a golf shoe having an upper section.



(c) [1.2] a sole section coupled to the upper section, wherein the sole section includes:

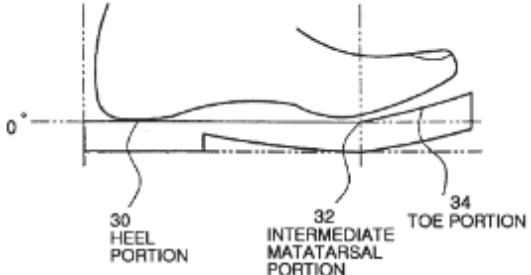
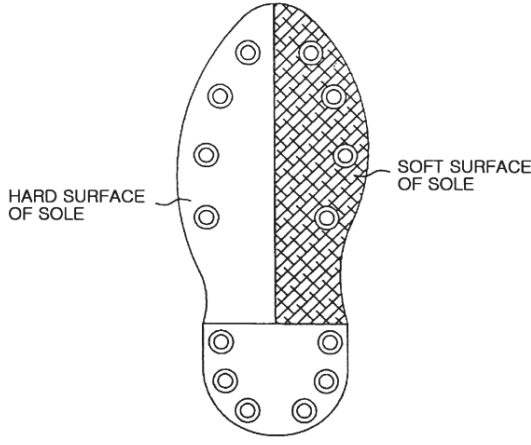
U.S. Patent No. 11,375,768	Won
[1.2] a sole section coupled to the upper section, wherein the sole section includes:	Won teaches and/or suggests a sole section coupled to the upper section of the shoe. FIG. 3 FIG. 1

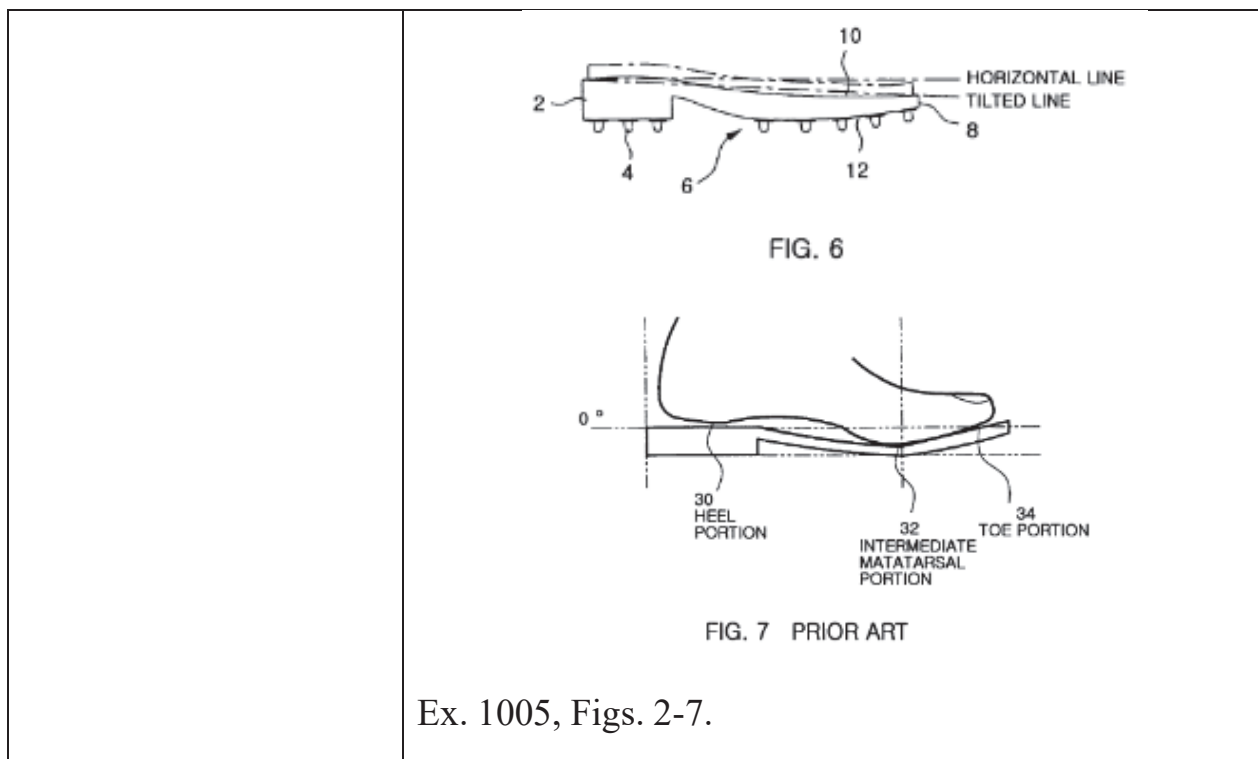
	“This invention is related to a golf shoe that naturally shifts the center of weight into a heel portion and cause smooth swing. The golf shoes according to this invention comprises a sole having a heel portion (30), a toe portion (34) formed continuously forwardly from the heel portion (30) and an intermediate metatarsal portion (32) formed between the heel portion (30) and the toe portion (34), wherein the toe portion (34) is angled 1~5° upward from a horizontal line taking the intermediate metatarsal portion (32) as pivot point and the heel portion is angled -7~7° from the horizontal line taking the intermediate metatarsal portion as pivot point.” <i>Id.</i>, Abstract.
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116. The ‘768 patent explains that the terms “operably coupled to”, “coupled to”, and/or “coupling” includes “direct coupling between items and/or indirect coupling between items via an intervening item (e.g., an item includes, but is not limited to, a component, an element, a circuit, and/or a module) where, for indirect coupling, the intervening item does not modify the information of a signal but may adjust its current level, voltage level, and/or power level. As may further be used herein, inferred coupling (i.e., where one element is coupled to another element by inference) includes direct and indirect coupling between two items in the same manner as ‘coupled to.’” ‘768 patent, 40:59-41:3.

117. For the figures that do not depict an upper section coupled to the sole, a POSITA would understand an upper coupled to the sole section to be necessarily present in a golf shoe.

- (d) [1.3] a heel platform having a first height that is substantially uniform around a perimeter of the heel platform, wherein the heel platform is constructed of a first material having a first compression factor; and

U.S. Patent No. 11,375,768	Won
[1.3] a heel platform having a first height that is substantially uniform around a perimeter of the heel platform, wherein the heel platform is constructed of a first material having a first compression factor; and	Won teaches and/or suggests a heel platform that has a substantially uniform height around a perimeter of the heel platform that is constructed of a material having a compression factor. Won discloses golf shoe designs that include a heel platform with a substantially uniform height.  FIG. 2  FIG. 5



118. A POSITA would understand that the heel portion in the Won figures is substantially uniform in height around a perimeter of the heel platform. For example, Figures 2, 6 and 7, all show a uniform height heel section, and Won describes that “it is preferred that said heel portion is ... substantially 0 degrees” From rear to front. Ex. 1005, 2:51-53; *see also, id.*, 4:6-12 (“the best stabilized stance” is provided when “the heel portion section is tilted 0 degrees from the horizontal line.”). A POSITA would also understand that the heel platform must be level from the inner edge to the outer edge to obtain the desired zero-degree tilt across the entire width of the heel and thus uniform in height around the perimeter of the heel platform.

119. Won also describes that Figures 6 and 7 depict a “conventional” golf shoe, which a POSITA would understand includes a heel platform that is substantially uniform in height around a perimeter of the heel platform based on Patent Owner’s apparent interpretation of this limitation. And Won teaches that the bottom surfaces of the heel platform and the toe platform of the prior art shoes are almost in parallel, further confirming that these are substantially flat surfaces. Ex. 1005, 1:42-50.

120. To the extent it is not clear that the embodiment disclosed in Figure 5 has a “conventional” heel that is substantially uniform in height around a perimeter of the heel platform, a POSITA would have recognized that the conventional heel, as depicted in Figures 6 and 7, could be used in this embodiment without altering the forefoot, or the rest of the shoe’s, design.

121. A POSITA would further understand that the “conventional” heel disclosed in Won would be made of a material inherently having some compression factor.

122. Furthermore, Norton and Giese (incorporated by reference into Norton) disclose several shoe embodiments wherein the heel platform is substantially uniform in height around its perimeter. See limitation, 1.3 in Ground 3, above. To the extent needed, it also would have been obvious to a POSITA to incorporate the heel designs disclosed in Norton and Giese that have a substantially uniform height

around their perimeter into the shoes disclosed in Won that have varying density forefoots without altering the forefoot, or the rest of the shoe's, design.

- (e) [1.4] a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor, wherein when the athletic shoe is worn by an athlete and weight of the athlete is applied to the athletic shoe, the second material compresses to a first level near an outer edge of the sole section and the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is greater than the first level of compression,

U.S. Patent No. 11,375,768	Won and Norton
[1.4] a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor, wherein when the athletic shoe is worn by an athlete and weight of the athlete is applied to the athletic shoe, the second material compresses to a first level near an outer edge of the sole section and the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is	Won teaches and/or suggests a golf shoe having a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of two materials, the material on the inside of the forefoot platform being softer and more compressible than the outside of the forefoot platform, such that when an athlete wears the shoe, the more compressible material compresses more, as depicted in Figure 5. The diagram shows a cross-section of a shoe sole. The forefoot is divided into two parts: a 'HARD SURFACE OF SOLE' on the outer edge and a 'SOFT SURFACE OF SOLE' on the inner edge. The heel is labeled 'Heel'. The forefoot is also labeled 'Forefoot'. FIG. 5

greater than the first level of compression,	“[T]he golf shoes can be formed such that the inside surface and outside surface separated by a central longitudinal axis of the sole (or mid sole) are different from each other. The inside surface is soft surfaced and outside surface is hard surfaced, both of which are made from elastic materials. When a golfer puts his both feet together to take a stance for swing, the spikes fitted on the part of the soft surface are pressed down because they are fixed on soft surface. But spikes formed on the hard surface remain the same position so that the sole is tilted toward the soft surface. Therefore the pair of shoes facing each other can be easily tilted to the insides of the shoes.” Ex. 1005, 4:46-58; <i>see also</i> 6:28-36. To the extent this limitation requires that the forefoot platform become “increasingly less compressible” over more than two points as you move from its inner edge to its outer edge, it is obvious in view of Norton, which expressly discloses it. “In one aspect, an embodiment of the invention relates to a method of manufacturing a sole element for a shoe, where the sole element has a varying density distribution in at least one direction, for example a transverse and/or longitudinal direction. The method includes manufacturing a sole element preform from a polymer material with a thickness varying in the transverse and/or longitudinal direction depending on the specific density distribution desired and press-forming the sole element preform in a forming tool to form the finished sole element from the sole element preform.” Ex. 1007, 3:33-43
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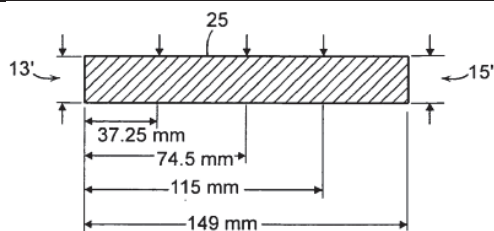


FIG. 4B

Referencing Figure 4B, Norton explains that “[i]f the hardness of the resulting sole element 25 is measured with reference to the distance from the left side 13’, the following values shown in Table 2 are obtained:”

TABLE 2

Hardness distribution of the shaped sole unit from the medial side 13' to the lateral side 15' in one embodiment	
DISTANCE FROM THE MEDIAL SIDE [MM]	HARDNESS [C]
0	60.0
37.25	57.5
74.50	55.0
115.0	52.5
149.0	50.0

Id., 7:44-58.

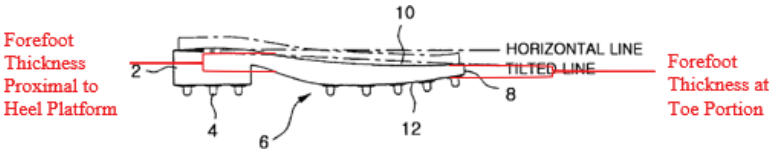
“[T]he hardness (measured in Shore C) decreases from about 60 C to about 50 C. Therefore, a reduction of about 10 C is obtained (i.e., in the range of about 15% to 20%), if the preform 20 is as described in Table 1 and consists of polyurethane.” *Id.*, 7:60-64.

This ‘continuously varying density distribution’ is due to the “surplus of material on the left side 13, which is compressed more than the material on the right side 15 during the final forming step.” *Id.*, 8:12-18.

123. While Table 2 discloses a sole that is less compressible near its inner edge, Norton discloses embodiments that both increase and decrease in density from

the lateral side to the medial side of the sole (id., 4:7-21; 6:33-37), and a POSITA would know to invert the hardness values in Table 2 for a sole designed to be more compressible near its inner edge.

- (f) [1.5] wherein the forefoot platform, at the outer edge, has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater than the second thickness.

U.S. Patent No. 11,375,768	Won
[1.5] wherein the forefoot platform, at the outer edge, has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater than the second thickness.	Won teaches and/or suggests a forefoot platform that has a first thickness at a position proximal to the heel platform and a second thickness at a toe portion, wherein the first thickness is greater than the second thickness, as shown in Figures 6-7.  FIG. 6

124. This limitation describes a shoe that includes a sole that is thicker at a position proximal to the front edge of the heel platform than at the toe portion. This sole design is common in almost all shoes, and has been a conventional design feature in athletic shoes, including in golf shoes, long before the ‘768 patent’s priority date as it places the foot in a more natural position and is more comfortable for running, walking, and sports-related activities. A POSITA would understand

that Won’s disclosure that Figures 6 and 7 depict a “conventional” golf shoe, would also teach and or suggest to a POSITA that the sole is thicker at a position proximal to the front edge of the heel platform than at the toe portion.

125. To the extent it is not clear that the embodiment disclosed in Figure 5 has a “conventional” forefoot platform like that claimed, a POSITA would have recognized that the conventional forefoot platform, as depicted in Figures 6 and 7, could be used in this embodiment without altering the reminder of the shoe’s, design.

126. Won also teaches that the bottom surface of the toe portion may be parallel with the bottom surface of the heel portion, and that the upper surface of the toe portion is lower than that of the upper surface of the heel portion (Ex. 1008, 1:46-53) thereby confirming that the thickness of the forefoot platform proximal to the heel portion is greater than the thickness at the toe portion.

(g) [2] The athletic shoe of claim 1, wherein the forefoot section comprises: a mid-foot section; and a toe section proximal to the mid-foot section.

U.S. Patent No. 11,375,768	Won
[2] The athletic shoe of claim 1, wherein the forefoot section comprises: a mid-foot section; and a toe section proximal to the mid-foot section.	Won teaches and/or suggests golf shoes that include a forefoot section that comprises a mid-foot section and a toe section. “The sole of the golf shoes according to the present invention comprises an intermediate metatarsal portion formed between toe portion (34) and heel portion (30), and the highs of said toe portion (34), heel portion (30) and intermediate metatarsal portion (32) are curved so

as to accompany the sole of a foot and toe portion (34) which is the front portion of the sole” Ex. 1005, 3:26-32.

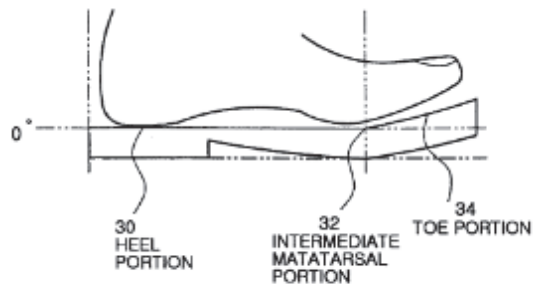


FIG. 2

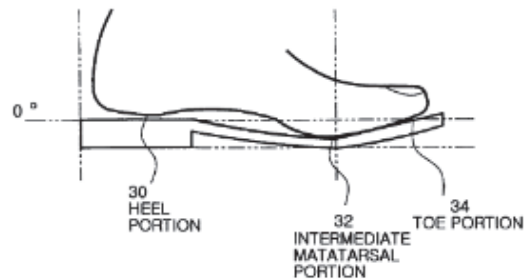


FIG. 7 PRIOR ART

Id., Figs. 2-7.

- (h) [3] The athletic shoe of claim 1, wherein the second material comprises: a resilient material of varying density to provide a compressible gradient to provide the gradient compression factor.

127. See limitation 1.4 above, describing Won’s disclosure of a golf shoe having a forefoot platform constructed of two materials, the material on the inside of the forefoot platform being softer and more compressible than the outside of the forefoot platform, and Norton’s disclosure of a forefoot platform manufactured from a single material that becomes “increasingly less compressible” from its inner edge to its outer edge.

- (i) **[4] The athletic shoe of claim 3, wherein the resilient material comprises one or more of: a rubber, a gel, a foam, a synthetic material.**

U.S. Patent No. 11,375,768	Won and Norton
[4] The athletic shoe of claim 3, wherein the resilient material comprises one or more of: a rubber, a gel, a foam, a synthetic material.	Won teaches and/or suggests a resilient material that comprises one or more of a rubber, a gel, a foam, or a synthetic material. Won explains that the forefoot platform is made up of two different “elastic materials.” Ex. 1005, 4:50-52. Similarly, Norton teaches and/or suggests a midsole that comprises a synthetic material. “The sole element includes a homogeneous polymer material including a portion having a locally varying density. The homogeneous polymer material may include ethylene vinyl acetate.” Ex. 1007, 3:59-61. “One embodiment of a preform 20 in accordance with the invention is shown in FIGS. 3A and 3B. In one embodiment, the preform is made from ethylene vinyl acetate (EVA); however, other foamed materials are also useful, such as polyurethane (PU).” <i>Id.</i>, 6:56-60.

128. A POSITA would understand that an “elastic material” includes at least the claimed rubber and synthetic materials, and that shoe soles made of these claimed materials were well known at the relevant time.

- (j) **[5] The athletic shoe of claim 1, wherein the second material comprises: a plurality of materials configured to provide a shape of the forefoot platform and to provide the gradient compression factor, wherein a first material of the plurality of materials is one of a foam, a soft rubber, memory foam, a housing that holds a liquid, and a material that compresses under pressure and substantially returns to its uncompressed shape when the pressure is removed.**

129. See limitation 1.4 above, describing Won's disclosure of a golf shoe having a forefoot platform constructed of two materials configured to provide a shape of the forefoot platform and Norton's disclosure of a forefoot platform manufactured from a single material that becomes "increasingly less compressible" from its inner edge to its outer edge, and see claim 4 above describing the forefoot platform materials, including an "elastic material" and EVA that a POSITA would understand compresses under pressure and returns to its uncompressed shape when the pressure is removed. A person of ordinary skill in the art would have known that it could have chosen one or several materials for obtaining the increasing compression gradient across the forefoot platform, for example, by meshing varying amounts of two materials across the width of the platform. This amounts to one of a limited number of design choices for obtaining the benefits of the gradient compression recognized in the prior art. This is especially true based on Norton's incorporation by reference of Talarico '911, which expressly discloses the use of two materials to provide a gradient compression factor, as described below. In view

of these disclosures, it would have been obvious to use one or a plurality of materials to achieve the benefits of gradient compression.

(k) [8] The athletic shoe of claim 1, wherein the sole section comprises: an insole; a mid-sole; and an out-sole.

U.S. Patent No. 11,375,768	Won
[8] The athletic shoe of claim 1, wherein the sole section comprises: an insole; a mid-sole; and an out-sole.	Won teaches and/or discloses an athletic shoe wherein the sole section comprises: an insole; a mid-sole; and an out-sole. “FIG. 2 to FIG. 4 represent the slope of the sole, and FIG. 5 is a plain view illustrating the sole or mid sole of the golf shoes of the present invention.” Ex. 1005, 3:24-26.

E. Ground 5: Claims 1-5, 8 are Obvious Over Won in View of Talarico ‘911

130. Ground 5 is similar to Ground 4, but relies on Talarico ‘911 rather than Norton as the secondary reference to disclose a forefoot platform that is “increasingly less compressible” from its inner edge to its outer edge.

Overview of the Combination

131. The combination of Won and Talarico ‘911 renders claims 1-5 and 8 obvious. Won discloses a golf shoe wherein the sole is constructed of two materials of varying density side-by-side, as discussed in Ground 1, but does not explicitly disclose a forefoot platform that becomes “increasingly less compressible” from its inner edge to its outer edge. Talarico ‘911, however, does.

Rationale (Motivation) Supporting Obviousness

132. It would have been obvious to incorporate a sole element having forefoot platform that becomes “increasingly less compressible” from its inner edge to its outer edge, as taught by Talarico ‘911, into the shoe disclosed in Won. A POSITA would have found it obvious to have combined the teaching of Won and Talarico ‘911 with a predictable outcome.

133. Won and Talarico ‘911 are both in the same field (shoe design), and both disclose similar improvements over typical shoes, namely, the use multiple materials to provide a variable compression sole. A POSITA would have naturally looked to Talarico ‘911 when considering ways to improve the Won sole design. A POSITA would have understood that a sole that is increasingly less compressible from the inside to the outside of the forefoot to provide several benefits. Indeed, Talarico ‘911 sought to improve upon the exact type of “medial and lateral half dual density” soles that Won disclosed. For example, as Talarico ‘911 explains, its design is “generally preferred to the medial and lateral half dual-density methods because of a more even and gradual alteration of the weight-bearing gravitational forces as they are delivered and directed across the forefoot section of the footwear.” Ex. 1008, 12:41-47; *see also id.*, 13:23-45 (design provides improved foot alignment and weight distribution, less wasted movement).

Reasonable Expectation of Success

134. A POSITA would have had a reasonable expectation of success in incorporating an insole having a compression gradient, like that in Talarico ‘911, into the shoe disclosed in Won. The vertical intersection of the two sole materials disclosed in Won could easily be replaced with the angled intersection between the materials as disclosed in Talarico ‘911, as shown in Figs. 9 and 13, to provide the additional benefits described above. The art was relatively predictable in the relevant timeframe. A POSITA would also have been able to make any necessary modifications to the shoe or shoe components to implement this Ground.

Analogous Art

135. Talarico ‘911 and Won are analogous art because they are in the same field as the ‘768 patent (Ex. 1001, ‘768 patent at Abstract, Title) (Ex. 1008, Talarico ‘911 at Abstract, Title) (Ex. 1005, Won at Abstract, Title), and all three relate to shoe designs that incorporate compressibility differentials within the sole.

Claims 1-5 and 8 are Obvious Based on Won in View of Talarico ‘911

(a) Limitations [1.0]-[1.2], [1.5], Claims 2, 8

136. See the corresponding discussions above for limitations [1.0]-[1.2], [1.5] and claims 2 and 8 in Ground 4, respectively.

- (b) [1.3] a heel platform having a first height that is substantially uniform around a perimeter of the heel platform, wherein the heel platform is constructed of a first material having a first compression factor; and**

137. Won teaches and/or suggests a heel platform that has a substantially uniform height around its perimeter that is constructed of a material, as discussed in Ground 4 above. Furthermore, Talarico '911 discloses that "the rearfoot portion [of the sole] is of constant thickness across the width thereof." Ex. 1008, Claim 1, 21:22-23. Talarico '911 also discloses a midsole having a consistent thickness throughout. Ex. 1008, 12:1-3, Figs. 8-15. A POSITA would conclude from these disclosures that the heel platform in Talarico '911 has a substantially uniform height around its perimeter.

138. Talarico '911 also describes that its invention was directed only to the forefoot portions of the footwear (Ex. 1008, 6:56-62), and a POSITA would understand that a typical athletic shoe has a heel platform that is consistent in height throughout. To the extent needed, it also would have been obvious to a POSITA to incorporate the heel platform disclosed in Talarico '911 that has a substantially uniform height around its perimeter into the shoes disclosed in Won that have varying density forefoots without altering the forefoot, or the rest of the shoe's, design.

- (c) [1.4] a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor, wherein when the athletic shoe is worn by an athlete and weight of the athlete is applied to the athletic shoe, the second material compresses to a first level near an outer edge of the sole section and the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is greater than the first level of compression,

U.S. Patent No. 11,375,768	Won and Talarico '911
[1.4] a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of a second material having a gradient compression factor, wherein when the athletic shoe is worn by an athlete and weight of the athlete is applied to the athletic shoe, the second material compresses to a first level near an outer edge of the sole section and the second material compresses to a second level near an inner edge of the sole section, wherein the second level of compression is greater than the first level of compression,	Won teaches and/or suggests a golf shoe having a forefoot platform juxtaposed to the heel platform, wherein the forefoot platform is constructed of two materials, the material on the inside of the forefoot platform being softer and more compressible than the outside of the forefoot platform, such that when an athlete wears the shoe, the more compressible material compresses more, as depicted in Figure 5. FIG. 5 “[T]he golf shoes can be formed such that the inside surface and outside surface separated by a central longitudinal axis of the sole (or mid sole) are different from each other. The inside surface is soft surfaced and outside surface is hard surfaced, both of which are

	made from elastic materials. When a golfer puts his both feet together to take a stance for swing, the spikes fitted on the part of the soft surface are pressed down because they are fixed on soft surface. But spikes formed on the hard surface remain the same position so that the sole is tilted toward the soft surface. Therefore the pair of shoes facing each other can be easily tilted to the insides of the shoes.” Ex. 1005, 4:46-58; <i>see also</i> 6:28-36. To the extent this limitation requires that the forefoot platform become “increasingly less compressible” over more than two points as you move from its inner edge to its outer edge, it is obvious in view of Talarico ‘911, which expressly discloses it. “The present invention is intended for any and all footwear wherein dual-density or dual-compressibility materials or combinations of different materials may be incorporated into either the midsole, outersole, or innersole construction of the footwear.” Ex. 1008, 1:11-18. In one embodiment, Talarico ‘911 discloses a sole created from 45-degree meshing of the two materials, which allows for “a more even and gradual alteration of the weight-bearing gravitational forces as they are delivered and directed across the forefoot section of the footwear during the midstance and propulsive phases of gait,” as depicted in Figs. 9 and 13. <i>Id.</i>, 12:41-47, <i>see also id.</i>, 11:42-55, 12:41-47.
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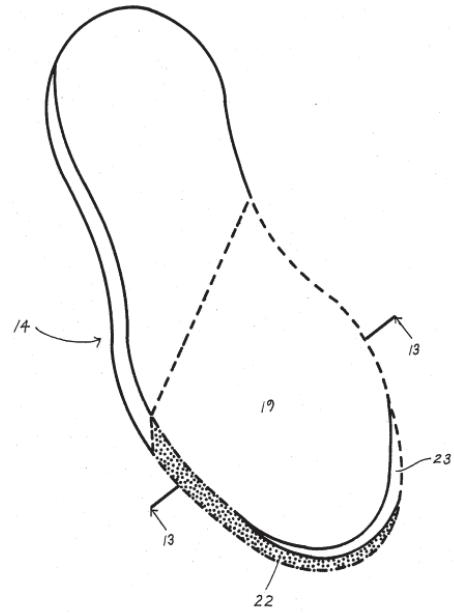


FIG. 9

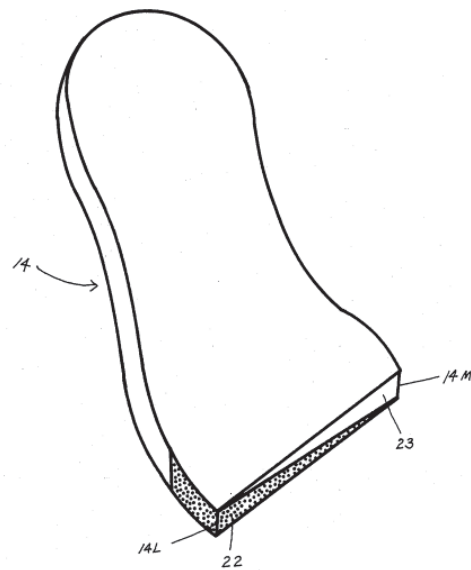


FIG. 13

“[T]he material employed on the lateral half of the forefoot is denser than the material used on the medial half of the forefoot.” *Id.*, 11:64-68.

139. A POSITA would have been motivated to replace the vertical intersection of the two sole materials disclosed in Won with the angled intersection

between the materials as disclosed in Talarico '911 to gain the described benefits. A POSITA would also understand that the varied density across the forefoot platform disclosed in Talarico '911 would cause the sole elements to compress more near their inner edge than near their outer edge when the weight of an athlete is applied to the shoe. *See, e.g. id.*, Abstract (“the sole effectively slopes at an angle upwardly from the lateral aspect to the medial aspect when weight-bearing forces are exerted on the forefoot”), 19:50-63.

140. And in the Notice of Allowance, the Examiner found that Talarico '911 “does teach forming a forefoot platform from a material having a gradient compression factor to provide a means for tilting the foot of a wearer....” Ex. 1011, p. 15.

(d) Claim 3 – The athletic shoe of claim 1, wherein the second material comprises: a resilient material of varying density to provide a compressible gradient to provide the gradient compression factor.

141. See limitation 1.4 above, describing Won’s disclosure of a golf shoe having a forefoot platform constructed of two materials, the material on the inside of the forefoot platform being softer and more compressible than the outside of the forefoot platform, and Talarico '911’s disclosure of a forefoot platform that becomes “increasingly less compressible” from its inner edge to its outer edge.

- (e) **Claim 4 – The athletic shoe of claim 3, wherein the resilient material comprises one or more of: a rubber, a gel, a foam, a synthetic material.**

U.S. Patent No. 11,375,768	Won and Talarico ‘911
[4] The athletic shoe of claim 3, wherein the resilient material comprises one or more of: a rubber, a gel, a foam, a synthetic material.	Won teaches and/or suggests a resilient material that comprises one or more of a rubber, a gel, a foam, or a synthetic material. Won explains that the forefoot platform is made up of two different “elastic materials.” Ex. 1005, 4:50-52. Similarly, Talarico ‘911 teaches and/or suggests a midsole that comprises a synthetic material. “In these examples of a running shoe midsole, usually ethyl vinyl acetate (EVA) or polyurethane are the materials commonly utilized in their construction.” Ex. 1008, 18:45-47.

142. A POSITA would understand that an “elastic material” includes at least the claimed rubber and synthetic materials, and that shoe soles made of these claimed materials were well known at the relevant time.

- (f) **Claim 5 – The athletic shoe of claim 1, wherein the second material comprises: a plurality of materials configured to provide a shape of the forefoot platform and to provide the gradient compression factor, wherein a first material of the plurality of materials is one of a foam, a soft rubber, memory foam, a housing that holds a liquid, and a material that compresses under pressure and substantially returns to its uncompressed shape when the pressure is removed.**

143. See limitation 1.4 above, describing Won’s disclosure of a golf shoe having a forefoot platform constructed of two materials configured to provide a

shape of the forefoot platform and Talarico ‘911’s disclosure of a gradient compression factor. See claim 4 above, describing the forefoot platform materials, including an “elastic material” and EVA that a POSITA would understand compresses under pressure and returns to its uncompressed shape when the pressure is removed.

F. Ground 6: Claims 1-5, 8 are Obvious Over Won in View of Talarico ‘911 in Further View of Gallas

144. Claim 1 recites a heel platform “having a first height that is substantially uniform around a perimeter of the heel platform.” To the extent Won and Talarico ‘911 do not expressly disclose this limitation, these claims would be obvious in further view of Gallas.

Overview of the Combination

145. The combination of Won, Talarico ‘911 and Gallas renders claims 1-5 and 8 obvious. To the extent Won and Talarico ‘911 do not expressly disclose that the heel platform has a height that is substantially uniform around its perimeter, Gallas does.

Rationale (Motivation) Supporting Obviousness

146. It would have been obvious to incorporate a heel platform that has a substantially uniform height around its perimeter, like that in Gallas, into the shoe disclosed in Won. A POSITA would have found it obvious to have combined the teaching of Won, Talarico’ 911 and Gallas with a predictable outcome.

147. Won, Talarico '911 and Gallas are all in the same field (shoe design), and disclose similar improvements over typical shoes, namely, the design of athletic shoe soles designed to increase comfort and performance. A POSITA would have naturally looked to Gallas when considering ways to improve Won's sole design. A POSITA would understand that providing a heel platform that is substantially uniform in height around its perimeter, as opposed to a heel platform that is angled, either from front to back or from one side to the other, provides a flat surface for the wearer's heel which provides additional stability, e.g., during the player's upswing, when weight is placed on the heels. Ex. 1020, ¶ 0017.

Reasonable Expectation of Success

148. A POSITA would have had a reasonable expectation of success in incorporating a heel platform that has a substantially uniform around its perimeter, like that in Gallas, into the shoe disclosed in Won. Won's sole, including the forefoot platform and heel, could easily be modified to include the sole shape disclosed in Gallas to provide the benefits described above. The art was relatively predictable in the relevant timeframe. A POSITA would have also been able to make any necessary modifications to the shoe or shoe components to implement this Ground.

Analogous Art

149. Won, Talarico '911 and Gallas are analogous art because they are in the same field as the '768 patent (Ex. 1001,'768 patent at Abstract, Title), (Ex. 1005, Won at Abstract, Title), ((Ex. 1008, Talarico '911 at Abstract, Title), (Ex. 1020, Gallas at Abstract, Title), and all relate to athletic shoe designs for improving comfort and performance.

Claims 1-5 and 8 are Obvious Based on Umezawa in View of Gallas

(a) Limitations [1.0]-[1.2], [1.4], [1.5], claims 2-5 and 8

150. See the corresponding discussions above for limitations [1.0]-[1.2], [1.4], [1.5] and claims 2-5 and 8 in Ground 5, respectively.

(b) Limitation [1.3] a heel platform having a first height that is substantially uniform around a perimeter of the heel platform, wherein the heel platform is constructed of a first material having a first compression factor; and

151. Gallas teaches and/or suggests a heel platform that has a substantially uniform height around a perimeter of the heel platform, as described in ground 2, above.

X. CONCLUSION

152. For the reasons set forth above, it is my opinion that claims 1-5 and 8 of the '768 patent are rendered obvious by the prior art.

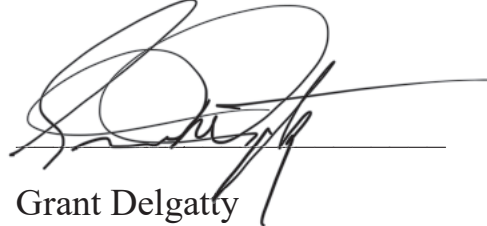
153. In signing this declaration, I understand that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the

United States Patent and Trademark Office. I acknowledge that I may be subject to cross-examination in this case.

I declare that all statements made herein of my knowledge are true, that all statements made on information and belief are believed to be true, and 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: 3/1/24

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Grant Delgatty', is written over a horizontal line. The signature is stylized with large loops and a long horizontal stroke extending to the right.

Grant Delgatty