

UNITED STATES DISTRICT COURT  
FOR THE  
DISTRICT OF VERMONT

U.S. DISTRICT COURT  
DISTRICT OF VERMONT  
FILED

2023 MAY 11 PM 1:28

CLERK

BY Sjl

VERMONT SAFETY DEVELOPMENTS )  
LLC, )  
 )  
Plaintiff )  
 )  
v. )  
 )  
HEAD SPORT GmbH, )  
 )  
Defendant. )

Case No. 2:23-cv-00089

**COMPLAINT FOR PATENT INFRINGEMENT**  
**AND DEMAND FOR JURY TRIAL**

Vermont Safety Developments LLC, as owner by assignment of United States Patent No. 7,523,953, entitled “Alpine Ski Binding System Having Release Logic for Inhibiting Anterior Cruciate Ligament Injury” (the “Ettlinger patent”), complains against the Defendant Head Sport GmbH for patent infringement as follows:

PARTIES

1. Vermont Safety Developments LLC (“VSD”) is a Vermont limited liability company with a place of business at 9 Sandhill Road, Underhill Center, Vermont, within this judicial district.
2. On information and belief, Head Sport GmbH (“Head”) is a limited liability company organized under the laws of Austria, with a place of business at Wuhrkopfweg 1, 6921 Kennelbach, Austria.
3. Head is in the business of, *inter alia*, manufacturing, distributing, and selling snow sports equipment including ski bindings throughout the world, including in the United States and

this judicial district.

JURISDICTION AND VENUE

4. This is an action for patent infringement arising under the patent laws of the United States, more specifically 35 U.S.C. § 271, *et seq.*

5. This Court has jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338.

6. Venue in this judicial district is proper according to 28 U.S.C. § 1391 and the laws of the United States Court of Appeals for the Federal Circuit.

7. On information and belief, Head and/or affiliates under its control operate and control the websites [www.head.com/en\\_US/](http://www.head.com/en_US/) (“head.com”) and [www.tyrolia.com/en\\_US/](http://www.tyrolia.com/en_US/) (“tyrolia.com”).

8. At the head.com website, four different models of the “Protector” ski bindings are offered, each on its own product web page: Protector PR 13 GW Alpine Bindings (Product No: 100880-CP), Protector PR 11 GW Alpine Bindings (Product No: 100882-CP), Protector Attack 13 MN Freeski Bindings (Product No: 114500.SET), and Protector PR11 GW Alpine Bindings (Product No: 114508-CP) (collectively, the “Protector ski bindings”).

9. Each Protector ski binding product web page includes a “Find It Locally” button that lists retailers where an array of products offered and sold by Head may be purchased within this judicial district. In total, the head.com web page identifies multiple retailers within this judicial district offering Head products.

10. Retailers within this judicial district identified on the head.com website and offering the accused Protector ski bindings within this judicial district include Peak Performance Ski Shop, located at 2808 Killington Road, Killington, VT 05751, Mountainside Ski Service, located at 205 Mountainside Drive, Warren, VT 05675, and Pinnacle Ski and Sports / SkiEssentials.com,

located at 192 Thomas Lane, Stowe, VT 05672.

11. On September 28, 2022, within this judicial district, Mr. David Dodge purchased accused Protector ski bindings from Head via the skiessentials.com website. The accused Protector ski bindings purchased by Mr. Dodge were made in Austria by Head, as stated on the product packaging, and were imported into and delivered within this judicial district to Mr. Dodge on or about October 5, 2022.

12. The accused Protector ski bindings have been and are being offered for sale within this judicial district by defendant Head.

13. The accused Protector ski bindings have been sold within this judicial district by defendant Head.

14. On information and belief, the accused Protector ski bindings have been and are being imported into this judicial district by defendant Head.

#### FACTUAL BACKGROUND

15. Co-inventor Carl F. Ettliger, who passed away in June 2020, was a recognized expert in the field of ski binding design and safety. In a professional career that extended over 50 years, beginning with his entry into the Mechanical Engineering Master's Degree program at the University of Vermont in 1969, Mr. Ettliger originated and collaborated in many significant advancements in ski equipment safety.

16. Mr. Ettliger's Master's thesis, "On the Prevention of Ski Injuries," May 1970, University of Vermont, analyzed causes of, and solutions to, tibia fractures in Alpine skiing, and led to the development of a simple product – the "Anti-friction device" (AFD) – that has been described as having "saved skiers untold billions in medical expenses and uncountable hours of pain." Skiing, January 1999, Vol. 51, No. 5.

17. Mr. Ettliger was a founding member of the American Society for Testing and Materials (ASTM) sub-committee F-8.14, dedicated to skier safety, known today as ASTM F-27 Committee on Snow and Water Sports. He also served as chair of several subcommittees, including on ski binding specifications and ski shop practices. Mr. Ettliger was also the Technical Delegate to the ISO/TC83 (International Standards Organization), shepherding through the adoption of new testing methods and common installation and inspection procedures, resulting in consistent practices being promoted by all binding technical manuals.

18. As a result of his expertise developed over many years, as a member of the ASTM Snow Sports Committee, Mr. Ettliger was responsible for or involved with the development of many important and influential standards, including ASTM F944 Standard Specification for Properties of Adult Alpine Ski Boots, ASTM F939 Standard Practice for Selection of Release Torque Values for Alpine Ski Bindings, ASTM F1061 Standard Specification for Ski Binding Test Devices, ASTM F1062 Standard Test Method for Verification of Ski Binding Test Devices, ASTM F1063 Standard Practice for Functional Inspections and Adjustments of Alpine Ski/Binding/Boot Systems, ASTM F1064 Standard Practice for Sampling and Inspection of Complete and Incomplete Alpine Ski/Binding/Boot Systems in Rental Applications, ASTM F473 Standard Specification for Binding Mounting Area Dimensions on Alpine Skis and Bindings, ASTM F504 Standard Test Method for Measuring the Quasi-Static Release Moments of Alpine Ski Bindings (testing the ski/binding/boot systems), and ASTM F1017 Standard Test Method for Testing Lateral Toe Release of Adult Alpine Ski Bindings Under Impact Loading.

19. In addition to his work on ski safety standards, Mr. Ettliger served as an adjunct professor in the College of Medicine at the University of Vermont, teaching subjects related to snow sports safety. He also founded two companies focused on the development of safer alpine

skiing equipment: Vermont Safety Developments (VSD) and Vermont Safety Ski Equipment (VSSE). In 1970s, through VSSE, Mr. Ettlenger introduced the Vermont Release Calibrator, a first of its kind system to measure the release torque of Alpine ski/boot/binding systems and thus allow accurate, quantitative analysis of boot/binding system release performance and comparison.

20. Using data and quantitative analysis enabled by the Sugarbush Study over many years, Mr. Ettlenger developed a program known as the “ACL Awareness Program” and “Tips for Knee-Friendly Skiing” which included an instructional video, first produced in 1995, that describes in detail the “Phantom Foot” mechanism of knee injury that has been recently appropriated by Head in its promotional videos for the accused Protector ski bindings. The Head video using Mr. Ettlenger’s description of “Phantom Foot” can be seen at [https://www.tyrolia.com/en\\_US/protector-attack-13-mn-114500-set.html](https://www.tyrolia.com/en_US/protector-attack-13-mn-114500-set.html).

21. It has been estimated that Mr. Ettlenger’s collaborative research and resulting innovations have saved the skiing public from tibial fractures costing conservatively an estimated \$600 million dollars annually. Mr. Ettlenger has also received a number of awards in recognition of his outstanding contributions to ski safety, including the ASTM honorary title of Fellow for “meritorious and dedicated leadership of the ASTM International Committee F27 and for conducting the seminal research that provided the technical basis for standards that have materially improved skiing safety worldwide.” Mr. Ettlenger also received the Carson White Golden Quill Award for Outstanding Contributions to the Advancement of Snowsports by the North American Snowsports Journalists Association.

22. At least as early as 1994, Head personnel were aware of Mr. Ettlenger’s knowledge and expertise and partnered with his then company, Vermont Safety Research, to gain access to



his research and work.

23. Throughout the latter part of the 1990s, Head continued its communications with Mr. Ettlenger regarding safer designs for downhill ski bindings and introduced a number of its technical personnel to Mr. Ettlenger and his work, including at least Robert Stanzl, Herwig Schretter, Alois Himmetsberger, Herbert Gruber, and Christoph Wurm.

24. On information and belief, these individuals held the following positions during or after the relevant time frame: Robert Stanzl (International Director of Marketing and Sales Alpine Ski Bindings), Herwig Schretter (Director R&D Head Tyrolia Wintersports – Head Sport GmbH), Alois Himmetsberger (a role in supervising ski binding design group), Herbert Gruber (head of Quality Management Winter Sports – Head Sport GmbH), and Christoph Wurm (Konstrukteur bei HTM Sports GmbH).

25. Mr. Wurm, a ski binding design engineer, participated in almost all meetings between VSD and Head personnel that later took place in Austria. Mr. Wurm was then later named as an inventor on the Head U.S. Patent No. 11,325,018 that describes the infringing Protector ski bindings in detail.

26. At least as early as 1994, Robert Stanzl of Head recognized Mr. Ettlenger's expertise in ski binding safety design and pursued various collaborations and engaged in continuing correspondence with Mr. Ettlenger in order to further Head's knowledge and understanding of more knee-friendly ski binding designs.

27. Head continued to leverage over many years the personal relationship that Robert Stanzl cultivated with Mr. Ettlenger by agreeing to invest small amounts for detailed studies, analyses and reports on knee-friendly binding designs and by feigning potential interest in a more extensive collaboration and support for Mr. Ettlenger's life's work.

28. In the early 2000s, Mr. Ettlinger entered into a collaboration with Co-inventor David J. Dodge to develop a new knee-friendly ski binding design. This collaboration led to the formation of Plaintiff VSD and a number of ski binding innovations leading to two granted United States patents and a number of foreign patents, including the innovative ski binding described and claimed in asserted Ettlinger patent.

29. At the time Mr. Dodge began the collaboration with Mr. Ettlinger, he already had over 30 years of experience in snow sports equipment design in roles ranging from design engineer for Rossignol Ski Company to Director of R&D for Burton Snowboards to owner of multiple independent ski equipment companies. Mr. Dodge is an inventor on more than 180 worldwide ski and snowboard technology patents.

30. The collaboration between Mr. Ettlinger and Mr. Dodge led to the development of the inventions disclosed and claimed in the Ettlinger patent for which an initial, provisional patent application, entitled “Knee-Friendly Ski Binding” and assigned serial number 60/836,454, was filed on August 8, 2006.

31. Combining their understandings of ski binding engineering principles and the mechanism of injury for ACL injuries developed over combined decades of experience, Mr. Ettlinger and Mr. Dodge innovated several patented binding designs that could more accurately detect and respond to injury-producing loads. Using video analysis and a newly developed force plate that was able to measure ski/binding/boot system loads in both magnitude and location along the ski, they were able to identify areas of excess binding retention and force/couple combinations that were associated with injury. Based on this extensive development work, Mr. Ettlinger and Mr. Dodge created a new type of ski binding system with an “intelligent platform” that was selectively responsive to certain load conditions that increased

the likelihood of ACL injury. This new type of “intelligent platform” binding system is embodied in the Ettlenger patent, which binding designs are able to measure not only dangerous twisting/bending moments but also the location of the forces producing those moments, thus eliminating blind spots of excess retention that conventional bindings are unable to resolve. It is the extensive investment in testing and development, as well as the patented designs described in the Ettlenger patent, that Head repeatedly sought access to in its dealings with Mr. Ettlenger, Mr. Dodge and VSD.

32. Believing that Head was genuinely interested in the important binding safety developments innovated by Mr. Ettlenger and Mr. Dodge, after filing the provisional application, Mr. Ettlenger sent a copy of the VSD provisional application to Mr. Herwig Schretter with a request for review and comment in August 2006.

33. Throughout August 2006, in response to questions from Head engineers, Mr. Ettlenger and Mr. Dodge provided detailed technical explanations regarding the operation of their inventive ski binding. The information provided was clearly stated to be covered by a prior confidentiality agreement between the two companies.

34. In order to learn more about the ski binding disclosed in the VSD patent application, Mr. Stanzl, Mr. Schretter and other Head engineers traveled to Vermont in October 2006 for an in-person meeting with Mr. Ettlenger and Mr. Dodge. Believing their discussions covered by the prior confidentiality agreement, Mr. Ettlenger and Mr. Dodge described in detail the design methodology and development of the soon to be patented ski binding, including information on method of injury (MOI), intervention methods and specific binding designs.

35. While waiting for a response from Head with respect to their provisional application, Head requested that Mr. Ettlenger and Mr. Dodge of VSD analyze certain other



binding data commissioned from the University of Innsbruck for accuracy. VSD identified a significant error in that data and in December 2006 Mr. Dodge sent Mr. Herwig Schretter of Head a copy of a report detailing the error.

36. In early 2007, Head studied the VSD work analyzing the inaccuracies in the Innsbruck binding release dataset and asked numerous technical questions, which were answered by VSD in extensive email exchanges, including further extensive and detailed reports of data analysis. Head included in this technical exchange Mr. Christoph Wurm, who was later named as an inventor by Head on its own U.S. Patent No. 11,325,018 describing the infringing Protector ski bindings.

37. During this same time frame, using principles developed by Mr. Ettliger and Mr. Dodge, Head undertook its own knee-friendly binding development program, but was thwarted repeatedly by a lack of understanding of some basic principles. Head thus repeatedly returned to Mr. Ettliger and Mr. Dodge to help correct its errors and assist in its own safe binding development project.

38. Requests for additional technical information from Head personnel to Mr. Ettliger and Mr. Dodge continued for the next few years. Head continued to seek information while repeatedly avoiding questions about its interest in a serious investment in the VSD technology and patent. Then, in April 2009, while reporting on additional requested work, Mr. Ettliger informed Head of the imminent grant of the Ettliger patent.

39. The Ettliger patent, United States Patent No. 7,523,953 B2, was granted to Carl F. Ettliger and David J. Dodge on April 28, 2009, for “Alpine Ski Binding System Having Release Logic for Inhibiting Anterior Cruciate Ligament Injury.”

40. VSD is the owner of the Ettliger patent by assignment from the inventors to the

Vermont Safety Developments partnership, a Vermont partnership, which was subsequently converted to Vermont Safety Developments LLC, a Vermont limited liability company, on February 28, 2023. The assignment is recorded with the United States Patent and Trademark Office at Reel 019648/Frame 0912.

41. After informing Head of the grant of the Ettliger patent in June 2009, communications from Head effectively ceased. In fact, thereafter, Mr. Dodge had to inquire a number of times regarding promised feedback on and return of a binding release simulator that VSD had developed and loaned to Head for evaluation.

42. From this point on, Head largely went silent with respect to its development efforts on a knee-friendly ski binding. In an attempt to generate new interest, Mr. Ettliger sent an update on the technology and recent work to Head in 2011. The only reply received from Head was from Mr. Alois Himmetsberger, a Head engineer with whom Mr. Ettliger had met with in the past on the knee-friendly ski binding project and who is himself a prolific inventor, named on over 60 Head/Tyrolia equipment patents. In a February 2011 email, Mr. Himmetsberger expressed regret that he was not at that time involved in research at Tyrolia, but further expressed his opinion that “your ideas are worth to spend time and money, but its not my decision.” The technical merit of the VSD technology was recognized within Head, even if it was unwilling to officially state as much.

43. Having heard little from Head for a number of years, VSD again tried to interest Head in licensing its technology and the Ettliger patent in 2017, including traveling to Austria to demonstrate a working prototype of the patented technology adapted to Head ski bindings. After many months and repeated follow ups, in February 2018 Head finally declined the offer of a license, stating “we are still not sure if we will develop a product....”

44. Taking Head at its word that it was not developing a product that would require a license under the Ettliger patent, VSD did not again contact Head on that topic for a number of years.

45. Then, in October 2019, knowing that Mr. Ettliger was seriously ill, Mr. Stanzl of Head sought to obtain data developed by Mr. Ettliger over many years from Mr. Ettliger's daughter, Heidi Ettliger. Mr. Stanzl provided no explanation for his sudden request nor why he had not contacted Mr. Ettliger directly. Ms. Ettliger provided some information in reply, but explained that she did not have access to the data Mr. Stanzl sought. In a further reply, Mr. Stanzl disingenuously agreed "that in the last decade there were no significant steps forwards to reduce the amount of injuries in skiing, especially knee injuries," while knowing full well that under his lead Head had rebuffed all attempts by Mr. Ettliger to get Head to license and adopt that very technology, the technology on which Head was then poised to file its own patent application.

46. Less than four months after Mr. Stanzl sought to obtain data from Mr. Ettliger's daughter without ever attempting to contact Mr. Ettliger himself, and in spite of Head previously stating it was not developing a knee-friendly ski binding product, Head filed its own Austrian patent application on a binding system incorporating the principles of operation developed by Mr. Ettliger and Mr. Dodge many years earlier. The patent application filed by Head was Austrian application no. A 50078/2020, filed January 31, 2020, and serves as the basis for a foreign priority claim in the later-filed application on the Head U.S. Patent No. 11,325,018.

47. After announcing the accused Protector ski binding as part of its winter 2022/2023 product line-up, Head described it as the "safest binding" ever built. But Robert Stanzl, director of marketing and sales at Head, went even further to describe the accused Protector ski binding.

Mr. Stanzl, who had corresponded with Mr. Ettlenger since the mid-1990s on skiing injury mitigation and safer ski binding designs, who had met with Mr. Ettlenger and Mr. Dodge numerous times in Vermont and in Austria on those same topics and the design of their patented binding, and who had been a guest at Mr. Ettlenger's home on more than one occasion, described the project to create the accused Protector binding as follows:

Never before has there been so much basic scientific research, medical and sports-scientific support for a long-term development project. And above all such detailed and result-oriented tests by internationally recognized scientific institutions, as with the Protector. Our thanks therefore also go to the University of Innsbruck/Tyrol, which has given us enormous commitment and sustained support in presenting the problem and examining the individual development steps.”

Snow Industry News, 26 Jan. 2023 (<https://www.snowindustrynews.com/articles/tyrolia-previews-protector-binding-potential-game-changer-for-acl-injuries>). The failure to acknowledge the extensive involvement of VSD and its principals in the development of the accused Protector ski binding over the preceding twenty-plus years can only be seen as an attempt to rewrite history and avoid responsibility for Head's clear, intentional and willful infringement of the Ettlenger patent by its new Protector ski binding.

48. Later in 2022, after Head announced that it was in fact intending to release a ski binding specifically designed to reduce ACL injuries in precisely the same way as first developed and patented by VSD, VSD made one final attempt to persuade Head to license its technology and the Ettlenger patent. This time the refusal from Mr. Stanzl was terse, stating only that after review by its patent attorney (notably not by any of the many engineers who had worked with and evaluated the technology multiple times over the preceding 16 years), Head was not interested.

49. On November 22, 2022, Head posted to YouTube a video describing the accused

Protector ski bindings (see <https://youtu.be/ghtr0amXrFA>). In this video, a number of the factual statements and improvements attributed to the Protector ski bindings were actually innovations developed by Mr. Ettliger and Mr. Dodge. For example:

- a. At the 1:10 mark, it is stated that the backward twisting fall is most prevalent type of knee injury fall. This was established by Mr. Ettliger in his early work in the 1970s.
- b. At the 1:13 mark, “Phantom Foot” is mentioned and a depiction is shown of that type of fall. Mr. Ettliger coined the term, the illustration shown is sourced from his papers, and the description of the “Phantom Foot” problem is taken almost word for word from the description in the “Knee-Friendly Skiing” video first produced by Vermont Safety Research, Mr. Ettliger’s earlier company, in 1995 and distributed as part of its ACL Awareness Program.
- c. At the 1:50 mark, the problem with conventional bindings being unable to sense the loads that cause knee injuries, and that a lateral heel release is needed to sense knee injury loads, are discussed. This problem and need were first identified by Mr. Ettliger and Mr. Dodge and formed the basis for the patented knee-friendly ski binding described in the Ettliger Patent.
- d. At the 3:40 mark, a 50% reduction in release values in regard to ACL injury is discussed. This information is also sourced from the work of Mr. Ettliger and Mr. Dodge. As just one example, in a presentation by Mr. Ettliger at the FIS Research Seminar sponsored by ISSS (International Ski Safety Symposium) in Tromso, Norway in April 2009 Mr. Ettliger explained: “If the true retention requirements of skiers were better understood, bindings could be developed that would provide a more appropriate margin of retention under conditions known to be associated with the Phantom Foot



ACL,” and also showed a figure depicting a 50% reduction in release torque of a simulated VSD patented binding relative to conventional bindings.

- e. At the 3:50 mark, the statement is made that “all of this has been vetted and tested by the University of Innsbruck” without referencing any of the extensive work contributed by Mr. Ettliger and Mr. Dodge to correct the error in the original data generated by the University of Innsbruck. *See* paragraph 35 above. Furthermore, Mr. Ettliger and Mr. Dodge were the first to propose that a 50% reduction in release when the load is in the 3rd quadrant is available and probably sufficient to significantly reduce ACL injuries.

**COUNT I – INFRINGEMENT OF U.S. PATENT NO. 7,523,953**

50. VSD repeats and realleges each and every allegation contained in Paragraphs 1 through 49 of the Complaint as if set forth in full herein.

51. On April 28, 2009, the Ettliger patent was duly and legally issued to Vermont Safety Developments, a Vermont partnership, on assignment of the inventors, Carl F. Ettliger and David J. Dodge.

52. By virtue of its ownership of the entire right, title and interest in the Ettliger patent, VSD has the right to sue and recover damages for infringement of the Ettliger patent and to otherwise seek enforcement of the rights of the Ettliger patent.

53. Defendant Head has directly infringed, is still directly infringing, and is contributing to and actively inducing infringement of the Ettliger patent within this judicial district by offering for sale, importing and selling the accused Protector ski bindings, which embody the subject matter and include each and every element of one or more of the claims of the Ettliger patent.

54. For example, the accused Protector ski binding, as recited in claim 30, is an apparatus for securing a boot to a ski to form a ski system. It includes a ski binding assembly that releasably secures the ski boot to the ski with a first release in response to a release condition, and assesses loading relative to a first axis and a second axis employing a mechanical release logic as recited in claim 30 so as to determine the cause of loading on the binding and provide release when the defined release condition occurs, therefore meeting each limitation of the claim.

55. Details of the accused Protector ski binding confirming the fact of infringement can be found in the aforementioned Head U.S. Patent No. 11,325,018 ("Head patent"), which describes embodiments of the accused Protector ski binding.

56. Direct and literal infringement of claims of the Ettliger patent is further established by the claim charts attached as **Exhibit 1**, which clearly show that the accused Protector ski bindings meet each and every limitation of at least claims 30, 35-38, and 53-56 of the Ettliger patent.

57. Head has knowledge of the Ettliger patent and has no license for use thereof. Accordingly, Head's infringement of the Ettliger patent has been and continues to be willful, wanton, deliberate and without license.

58. Unless preliminarily and permanently enjoined by this Court, Head will continue its acts of infringement to VSD's immediate, substantial and irreparable harm.

59. As a result of Head's infringing activities, VSD has suffered and will continue to suffer damages.

WHEREFORE, the Plaintiff respectfully demands:

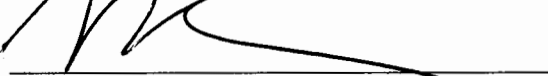
- (a) a preliminary and permanent injunction against Head's continued infringement of the Ettliger patent;
- (b) an accounting for damages;
- (c) interest and costs; and
- (d) such other and further relief as the Court deems appropriate.

**JURY DEMAND**

Plaintiff VSD demands trial by jury of all issues so triable with respect to the Complaint.

Burlington, Vermont  
May 11, 2023

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