

CHAPTER 8 · INTELLECTUAL PROPERTY IN SPORTS

Section 1: What is Intellectual Property?

Everyone has a mental working definition of the meaning of property. We usually define it in some tangible manner that really does not take into consideration its abstract quality. For instance, one might point to a home, car or clothes as property since they own or possess these items. A home is traditionally considered real property — something dealing with land or immovable objects attached to land. Autos or clothes are considered personal property and ownership to all these items is based on some physical indicia of such a claim like a deed, a title, or receipt. When documentation is lacking or challenged for validity, the "relative" merits of competing individuals claims must be evaluated. The manner in which they gained access to the item then becomes more important than the item itself.

No legal topic places more emphasis on relativity than the area of intellectual property. Intellectual property has been called legal metaphysics by some of our most noted jurist and defined in progressively less attractive terms by many others.¹ "Intellectual" brings to mind connotations of bearded men sitting on stoops to some, while others may think of nerdy individuals, usually somewhat disheveled but for their neatly appointed shirt pockets filled with a variety of writing utensils. Although these visages may be somewhat misleading they do properly indicate that the intellect deals with one's mental capacity. Surely the products of a person's intellect is personal and thus can be viewed as property.² However a problem arises when we move to give legal protection to the proprietary interest of the ideas generated from the use of that intellect. Generally one's ideas are not protectable under the law.³ Thus has evolved a caveat that if you don't want to lose it — don't use it.⁴

While this sounds a bit draconian, the fact is that most people go beyond contemplation and discussion, ultimately placing their ideas in some tangible form. Maybe this reduction takes the form of a playbook, or a fight song, or an animated drawing which becomes a team logo, or maybe a

¹ Justice Story is attributed with saying:

Patents and copyrights approach, nearer than any other class of cases belonging to forensic discussion to what may be called the metaphysics of the laws, where the distinctions are, or at least may be, very subtle and refined, and sometimes, almost effervescent. *Folsom v. Marsh* (C.C.D. Mass. 1841) (No. 4901), ARTHUR R. MILLER & MICHAEL H. DAVIS, INTELLECTUAL PROPERTY at 1 (2d ed. 1990).

² Note that this statement is rather conclusory and not wholly supported by the law as it relates to one's physical persona. Indeed, the Constitution upon which the foundation of our country rests includes the oft-quoted phrase, "We the people" ... but was understood to wholly exclude Indians and recognize Africans and African-Americans as only 3/5th of a person. U.S. CONST. art. I, § 2, cl. 3, amended by U.S. CONST. amend. XIV, § 2. While most humans are currently recognized by our present law, numerous debates still rage over whether the physical being is given enough significance. Witness the current dispute over abortions. For a case indicating that frozen embryos are not strictly "persons" or "property" see *Davis v. Davis*, 842 S.W. 2d 588 (Tenn. 1992). Some courts have refused to find that a person has property rights in their own genes and cells. See, e.g., *Moore v. Regents of the University of California*, 793 P.2d 479 (Cal. 1990).

³ See, e.g., 17 U.S.C. § 102(b) (1976).

⁴ Actually individuals have long found protection for the divulgence of their ideas in the area of contract law. Parties may choose to avail themselves of nondisclosure agreements wherein the ones to whom information is being released, bind themselves to certain remedies should they allow unintended third-parties access to the data. Additionally common law has traditionally recognized a cause of action for what is known as "misappropriation." For a further discussion of the development of this legal theory see *infra* Section 4(C), page 8-59.

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working mechanical model which may bloom into a "Zamboni."⁵ (See Figure 1.) It is true that these items can be viewed as personal property which may be governed by much of the traditional law such as contracts, torts or basic property. However the use of these laws presume that intellectual property issues involved in these items have been resolved.

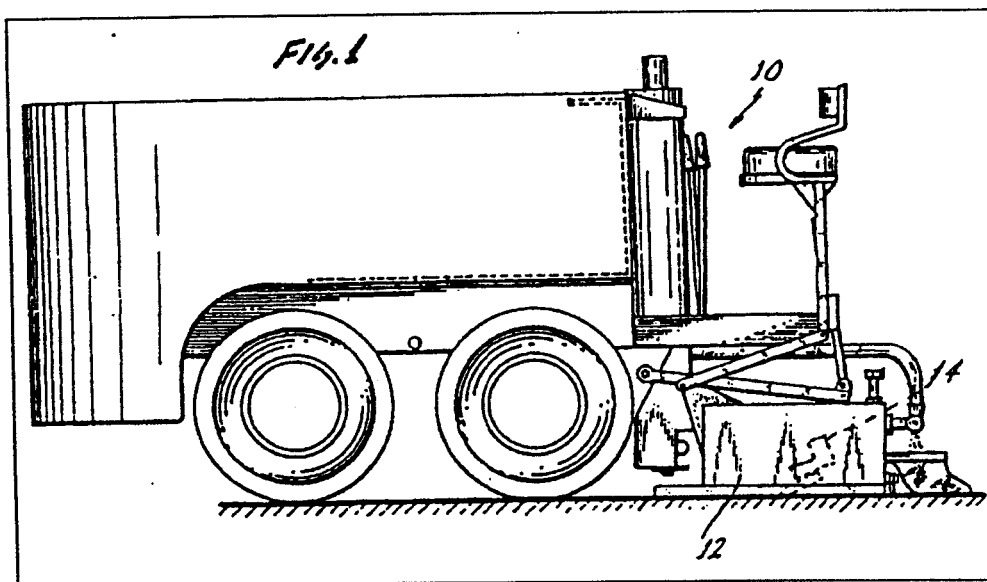


FIGURE 1

Intellectual property traditionally covers the law of patents, trademarks, copyright, and unfair competition. We will discuss each of the areas in more detail later. These laws were developed to help society's continual evolution toward a more progressive and comfortable existence. Each area rewards the developer of a certain creative form with a qualified monopoly for some limited period of time so he or she may experience personal gain through exploitation of their new development.⁶ This individual exploitation is however balanced against various societal interests. It is a competitive balance that is sought which will hopefully provide a continuing impetus for further developments. Competition is therefore stimulated which society finds agreeable in a sporting sort of way as long as the competition is fair.

Intellectual property is directly related to most aspects of what attracts us as sports fans today. The marketing of sports and athletes is inextricably intertwined with the laws of intellectual property. "It's where the money's at." If we look at the four major domestic sports (football, baseball,

⁵ A "Zamboni" is the machine used to resurface the ice after skaters have roughened the surface through their competitive enterprise. The "Zamboni" is familiar to hockey fans everywhere and is a registered trademark of Frank S. Zamboni & Co. of Paramount, California. Frank and Richard Zamboni, as principals, and the Zamboni corporation, as assignees, hold several patents for ice resurfacing items. See, e.g., U.S. Patent 4,705,320, Nov. 10, 1987.

⁶ It is a common misconception that all monopolies are illegal. The law involving sports entities is littered with examples of exceptions to the antitrust laws. For a comprehensive discussion of the relationship between sports and monopolies, see Stephen F. Ross, *Monopoly Sports Leagues*, 73 MINN. L. REV. 643 (1989).

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basketball, hockey) recent figures indicate the average per team value to be \$107 million.⁷ Players annual salaries in these sports average in excess of \$1 million at the professional level.⁸ In addition to these salaries, athletes routinely command from \$3 million to \$30 million annually in additional compensation for commercial endorsements.⁹ Sales of licensed collegiate products were approximately \$2.5 billion in 1993.¹⁰ Additionally, universities annually collect in excess of \$200 million in royalties for many of their patented inventions.¹¹

Figures such as those above indicate that if one has the talent to play for a team or enough savvy to either own a team or market licensed products a substantial amount of money is available. Many are no doubt thinking of an entree into sports law as agents, believing that millions can be made through the negotiation of an athlete's contracts.¹² However the sports agent market is a crowded field due to the lack of any consistent regulations.¹³ The major sports are, however, uniform in limiting the amount of compensation agents can secure by virtue of employment contract representation. These limitations, which are normally 3%-5% of the money actually received by the athlete, do not apply when representing the athlete beyond the player contract. Therefore consultation on shoe contracts, athletic wear, media appearances and the like fall outside of league oversight. With sports marketing now being a multi-billion dollar industry the importance of those involved in sports law being competent in the area of intellectual property becomes clear. Let us now explore the basics of the interrelationship of sports and intellectual property.

* * *

To assist us in our exploration, let's enlist the assistance of our quintessential old neighborhood athlete JoJo Bubba Scrub. JoJo is a recent college grad from Brainy Jock University.

⁷ Michael K. Ozanian, *Why Sports Franchise Values are Soaring Even as Team Profits Fall*, FINANCIAL WORLD, May 10, 1994 at 50.

⁸ The average salary for the 1993-94 season for a professional basketball player in the National Basketball Association was \$1.6 million. For a player on a Major League Baseball team, that figure was \$1.2 million. The National Football League pays its average player in excess of \$750,000 while the National Hockey League is at the tail end of the salary scale, paying approximately \$525,000 on average. Basketball players are seeking to increase their future earnings as are baseball and hockey team members. As of this writing, only the NFL has a settled collective bargaining agreement (CBA) in effect, having reached a new ten year agreement in 1993. Baseball and hockey were of course both embroiled in bitter strikes in 1995. Basketball's agreement between players and management also expired. However, in light of the void left by the baseball and hockey work stoppages, the two sides agreed to play the season with the matter unresolved.

⁹ *SML's Ten Most Wanted Spokespersons*, THE SPORTS MARKETING LETTER, March, 1994 at 6.

¹⁰ Mark Albright, *What's in a Name? Cold Hard Cash*, ST. PETERSBURG TIMES, September 18, 1994 at H1 and H12.

¹¹ Goldie Blumenstyk, *A 40% Increase in Income From Inventors*, THE CHRONICLE OF HIGHER OF EDUCATION, Nov. 9, 1994, at A37.

¹² Of course there are mega-agents just like there are mega-stars. Most have achieved that status by a combination of luck and longevity. Interestingly only a small percentage of these "elder" agents are attorneys. For instance, Dennis Gilbert, an insurance salesman, represents Barry Bonds, Bobby Bonilla, Danny Tartabull and Jose Canseco. These athletes represent the highest, fifth highest, eleventh highest, and thirteenth highest contracts in major-league baseball's history. See Skip Hollandsworth, *Batting a Million*, USA WEEKEND, July 9-11, 1993 at 4.

¹³ Each of the four major sports leagues have independent procedures for regulating contract advisors. The latest directory for football agents indicates that the ratio of agents to players in that league alone approximates 5 to 1. See NFLPA Member Contract Advisor Directory, 1995.

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He lettered in football, basketball, and baseball, stands 6'6", weighs 265 lbs., runs 4.4, has a 42" vertical leap and bench presses 500 lbs. He played tight-end, power forward, and first base on the respective teams, starting in each position on the B.J.U. varsity all four years. JoJo still managed to get his degree in communications (of course graduating with honors) which he plans to parlay into a broadcasting career someday. He's also considering going to law school. At present he's biding his time, playing a lot of golf while the teams stumble over themselves hoping he'll pick their sport. Little do they know that JoJo plans to be the first three sport all-star. He plans to first play football and basketball then go to baseball for the twilight years of his career.

Section 2: Patent Law

Like most people, JoJo grew up worshipping a number of professional athletes. JoJo loved to watch some of his favorite baseball players *patented* swings, as well as basketball players *patented* shots. JoJo has developed certain signature moves of his own and often heard sportscasters referring to his moves as patented. He had taken a marketing class as part of his undergraduate education where the professor briefly discussed the basic aspects of intellectual property. However, all JoJo remembered was that a patent could be worth a lot of money. You and JoJo work out at the same health club. One day while he waits for you to finish on the bench, he tells you that he will pay you handsomely to secure a patent on his moves. Can it be done?

A. Introduction to Substantive Patent Law

Most of the devices used in daily life are taken for granted. When we don our workout wear and head out for sporting pleasure, we generally disregard the legal implications that have marked the development of the gadgetry at our disposal. The evolution of these items from ideas to tangible products involves the area of patent law.

Patent law is largely directed by the Patent Act, a federal statute reproduced in pertinent part below.¹⁴ The first federal patent law dates to 1790, although protection for inventors was one of the foundations of our original constitution.¹⁵ Of course, this is not to say that it took eighteen centuries before man began inventing. Actually, anthropologists today often point to the types of tools and instruments found with fossils to try and date the origins of human existence.¹⁶ However, a codified system of awards for inventors can only be traced back to the fifteenth century.¹⁷

¹⁴ Patent Act 35 U.S.C. §§ 1-376 (1995).

¹⁵ See, e.g., U.S. CONST. art I, § 8, cl. 18.

¹⁶ See, e.g., Richard A. Goldsby, *Putting A Crack in the Bell Curve*, THE JOURNAL OF BLACKS IN HIGHER EDUCATION, Spring 1995, No. 7 at 106, 107, noting in a section subtitled, *More Trouble for the Neo-Eugenicists*, which quotes an April 28, 1995, WASHINGTON POST story on animal bones being carved into spearing fish hooks as indicative of sophisticated technological developments from about 90,000 years ago.

¹⁷ See generally BRUCE BUGBEE, GENESIS OF AMERICAN PATENT & COPYRIGHT LAW (1967).

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The last major revision of the current patent act took place in 1952¹⁸. However, much of the structure and many of the basic principles of our domestic patent law draw heavily from the earlier statutes. The sections of the act which provide the foundation for qualifying an invention for patent protection are relatively short. Thus, a persistent problem has existed throughout history in determining whether an invention meets the legal threshold for recognition and thus protection.

The Patent Act 35 U.S.C.A. §§ 1-376

* * *

§ 100 · Definitions

When used in this title unless the context otherwise indicates —

- (a) The term "invention" means invention or discovery.
- (b) The term "process" means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.
- (c) The terms "United States" and "this country" mean the United States of America, its territories and possessions.
- (d) The word "patentee" includes not only the patentee to whom the patent was issued but also the successors in title to the patentee. (July 19, 1952, c. 950, 66 Stat. 797.)

§ 101 · Inventions Patentable

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title. (July 19, 1952, c. 950, 66 Stat. 797.)

§ 102 · Conditions for Patentability; Novelty and Loss of Right to Patent

A person shall be entitled to a patent unless —

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or
- (b) the invention was patented or described in a printed publication in this or a foreign country or in a public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or
- (c) he has abandoned the invention, or
- (d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States, or
- (e) the invention was described in a patent granted on an application for patent by another

¹⁸ The leading treatise on patent law is Donald Chisum's, *PATENTS* (1989), which is regularly updated and draws helpful comparisons between the current law and its predecessors. The Patent Act of 1790 was revised in 1836 and then again in 1952. However, when necessary, piecemeal revisions have taken place, such as the recent language recognizing the impact of NAFTA. *See, e.g.*, 35 U.S.C. § 104(a) (1994).

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filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent or

(f) he did not himself invent the subject matter sought to be patented, or

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reaction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

§ 103 · Conditions for Patentability; Non-Obvious Subject Matter

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made. Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

B. Examining the Basic Requirements

UNIVERSAL ATHLETIC SALES CO. v. AMERICAN GYM CORP.

(UNIVERSAL ATHLETIC SALES CO. I)

397 F. Supp. 1063 (W.D. Pa. 1975)

* * *

KNOX, District Judge

In this civil action the court must determine the validity of United States Letters Patent No. 2,932,509, "Body Exercising Apparatus," issued to Harold Zinkin on April 12, 1960.... The path of this litigation has been filled with detours: a motion to disqualify counsel, a motion for civil contempt, and of course, lengthy discovery with resistance from both sides. Zinkin's "Body Exercising Apparatus" has given exercise to lawyers and judges in a manner the inventor would never have imagined.

* * *

I. Patent Validity and Infringement

The Zinkin patent contains eight claims of invention. Of these, only claims under Numbers 3 and 4 are disputed in this case. The claims read as follows:

3. A body exercising apparatus comprising an elongated substantially horizontal table having a predetermined head end and a foot end, an elongated bar extended from the head end of the table in substantial alignment therewith and having an end adjacent to the table and an opposite end, means pivotally mounting the extended end of the bar for pivotal movement about a substantially horizontal axis transversely on the

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table and in spaced relation to the head end thereof whereby elevational movement of the bar causes the end thereof adjacent to the table to describe an arc with its concave side disposed toward the table, a pair of handles aligned transversely on the table, means rigidly mounting the handles on the bar for integral pivotal movement therewith, stop means engageable with the bar limiting downward travel of the handles to positions in upwardly spaced relation to the table, and means connected to the bar resistive to upward pivotal movement thereof.

4. A body exercising apparatus comprising an elongated substantially horizontal table adapted to support a person in supine position thereon having a predetermined head end and foot end, a framework adjacent to the head end of the table, an elongated bar pivotally mounted in the framework in substantial alignment with the table for movement about a substantially horizontal axis transversely of the table in spaced relation to the head end thereof and said bar being extended toward the table, a pair of handles rigidly mounted on the bar and disposed on opposite sides of the head end of the table, said bar terminating short of the table and leaving the area above the head end thereof free from obstruction, adjustable weight means borne by the bar, and a stop mounted in the framework engageable with the bar limiting downward pivotal movement thereof to a position with the handles disposed at an elevation above the table.

In simple terms, the claims describe a machine for simulating the chest press exercise performed with a free barbell, the exerciser lies on his back on a table and raises the barbell, to which weights may be added, from a position where his hands are near his chest and the bar is approximately aligned with the nipples to a position where the arms are fully extended and the bar is aligned with the shoulders. The exerciser continues by raising and lowering the barbell as many times as he desires or is able. A "spotter" is generally required to handle the barbells before and after the exercise and to safeguard the exerciser should he tire.

Using the patented machine, the exerciser lies on his back on a table and pushes against handles. The handles are mounted horizontally and at right angles to the exerciser's body so that the exerciser's hands are approximately in the same position as they would be to perform a chest press with a barbell. When the exerciser pushes on the handles, they move through a shallow arc to a point approximately the same as that of the final position in the chest with a free barbell. The design of the machine prevents the handles or attached bar and weights from striking the exerciser should he tire and be unable to complete the lift. The handles cannot move laterally with respect to the exerciser.

The machine does not consist of complicated arrangements of motors, gears, pulleys, springs, or other mechanical apparatus. Essentially, the machine is a lever. One end of the lever is pivotally mounted to a solid frame. The other end has handles attached. Weights are mounted to the lever to provide resistance, and provision is made so that the amount of resistance can readily be changed.

"There is no question raised in this case as to the utility of the patented device. The utility of the chest press machine is apparent by its commercial success, by its safety advantage over the free barbell (the weights cannot fall on the exerciser), by the elimination of a spotter, and by the fact that the exerciser need not balance the resistance against lateral movement."

The defendants attack the Zinkin patent as lacking in novelty and being, at best, an obvious improvement on prior art. In statutory terms, their objections are embodied on 35 U.S.C.A. §§ 102, 103. After careful consideration, the court concludes that the Zinkin patent is void for obviousness and lack of novelty and invention.

We must begin with the proposition that a patent is presumed to be valid and that the burden of proof is on the party asserting invalidity. 35 U.S.C. § 282. As noted in *Trio Process Corp. v. L. Goldstein's Sons, Inc.*, 461 F.2d 66 (3d Cir. 1972), *cert. den.* 409 U.S. 397, 93 S. Ct. 319, 34 L. Ed.

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2d 262, the burden of proof is a heavy one and invalidity must be demonstrated by clear and convincing proof.

The Supreme Court has set forth the criteria for determining the question of obviousness in *Graham v. John Deere Co.*, 383 U.S. 1, 86 S. Ct. 684, 15 L. Ed. 2d 545 (1966):

[T]he scope and content of the prior art ..., differences between the prior art and the claims at issue ...; and the level of ordinary skill in the pertinent art.... Such secondary considerations as commercial success, long felt but unresolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. 383 U.S. at 17, 86 S. Ct. at 694, 15 L. Ed. 2d at 556.

The Supreme Court recognized in *John Deere* that § 103 was, for the first time, a statutory expression of the additional requirement of patentability originally expressed in *Hotchkiss v. Greenwood*, 11 How. 248, 13 L. Ed. 683 (1850). While the court noted that § 103 abolished the controversial phrase "flash of creative genius" used in *Cono Corp. v. Automatic Devices Corp.*, 314 U.S. 84, 62 S. Ct. 37, 86 L. Ed. 58 (1941), and that the section focuses on the term "non-obvious" rather than on the "invention" language of *Hotchkiss*, the court held:

Although we conclude there that the inquiry which the Patent Office and the courts must make as to patentability must be beamed with greater intensity on the requirements of § 103, it bears repeating that we find no change in the general strictness with which the overall test is to be applied. 383 U.S. at 19, 86 S. Ct. at 694, 15 L. Ed. 2d at 557.

The overall test referred to is indeed a rigorous one, and no better expression of this can be found than in the famous "A & P" case [*Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp.*, 340 U.S. 147, 71 S. Ct. 127, 95 L. Ed. 162 (1950)] in which the court held invalid a patent for the invention of "a cashier's counter equipped with a three-sided frame, or rack, with no top or bottom, which, when pushed or pulled, will move groceries deposited within it." The court said:

Courts should scrutinize combination patent claims with a care proportioned to the difficulty and improbability of finding invention in an assembly of old elements. The function of a patent is to add to the sum of useful knowledge. Patents cannot be sustained, when on the contrary, their effect is to subtract from former resources freely available to skilled artisans. A patent for a combination which only unites old elements with no change in their respective functions, such as is presented here, obviously withdraws what already is known into the field of its monopoly and diminishes the resources available to skillful men. This patentee has added nothing to the total stock of knowledge, but has merely brought together segments of prior art and claims them in congregation as a monopoly. 340 U.S. 152-153, 71 S. Ct. at 130, 95 L. Ed. at 167.

* * *

In determining the question of obviousness the court must consider all prior art whether or not the patentee knew of it. *Layne-New York Co., Inv. v. Allied Asphalt Co., Inc.*, 501 F.2d 405 (3d Cir. 1974) cert. den. 421 U.S. 914, 95 S. Ct. 1572, 43 L. Ed. 2d 780 (1975); *Arrow Safety Device Co. v. Nassau Fastening Co.*, 496 F.2d 644 (3d Cir. 1974). The fact that significant prior art not considered by the Patent Office is brought forth weakens the patent's presumption of validity. *Layne-New York, supra*; *U.S. Expansion Bolt Co. v. Jordan Industries, Inc.*, 488 F.2d 566 (3d Cir. 1973).

We are cautioned that the mere simplicity of the device, though it may suggest obviousness, is not by itself a reliable test of obviousness, as many things will seem obvious when viewed with the

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advantage of hindsight. See *Price v. Lake Sales Supply R. M., Inc.*, 510 F.2d 388 at 393 (10th Cir. 1974). A device may of course, satisfy the requirement of Section 102 with a novel combination of old elements, yet fail to satisfy the Section 103 requirement of non-obviousness.

It is against this background that the court must determine the validity of Zinkin's patent. The defendants rely on the following in support of their claim of invalidity:

DX-3 (in part): Patent No. 117,339, dated July 25, 1871, by C.A. Simmons for a "Lifting Machine". (Cited by Patent Office as prior art).

DX-7 and DX-17: Picture appearing in "Strength and Health" magazine, May-June, 1950, p. 50, showing exercise apparatus attributed to Sam Loprinzi and described in the accompanying text as "super-duper pressing apparatus". DX-17 is an artist's sketch of the apparatus shown in DX-7 (Not cited by Patent Office as prior art).

DX-15: Marcy's "New March 1" exercising machine, shown in March catalogue of 1975.

DXE-35: Machine used by Pittsburgh Steeler Football team. Designed by Reicke.

We now discuss these materials under the primary criteria set forth in *Graham*. In our inquiry here we will disregard the Marcy and Reicke machines (DX-15 and DXE-35), as these were obviously designed subsequent to the Zinkin patent.

A. The Scope and Content of the Prior Art

The Simmons patent shows an exercising machine patented in 1871. A framework consisting of three sets of parallel bars is pivoted on a stand. Each set of parallel bars has notches in which a cylindrical weight is placed, and the amount of resistance to be lifted is adjusted by placement of the weights in the various notches. The framework has handles with which the exerciser pivots the bar and weights. As the patent does not picture a table and since the specifications state: "I make two sets of handles at different heights for suiting the machine to short or tall people," it is apparent that the machine is used to perform lifts from a standing, rather than a prone, position.

The Loprinzi apparatus (DX-7 and 17) shows a pair of levers over a table. The levers have brackets for weights. From looking at the picture, it is not clear in what direction the levers can be moved, but the caption "super-duper pressing apparatus" would clearly indicate to one familiar with weight-training that the movement is vertical. It also appears that each lever is moved independently of the other, but that, too, is not certain from the picture and caption. A picture of the Loprinzi apparatus appeared in a magazine of May-June, 1950.

B. Differences Between the Prior Art and the Claims Issue

The Zinkin, Simmons and Loprinzi devices all operate on the same basic principle: weights attached to a lever are rotated about a pivot. The Simmons patent is designed, not for the chest press exercise, but for some other exercise performed in a standing position. However, we find this difference insignificant and find that it would be obvious to change the design to a higher or lower elevation so that the exerciser can perform different lifts. The addition of a table for this purpose is a trivial change. Likewise, we find that the handles on which the exerciser pushes or pulls are different on the three devices, but that this change, too, is obvious. The three devices, of course, are quite different in appearance, but as we have stated, their operating principles are essentially the same. We find that the improvements made by Zinkin over prior art and cited by plaintiff as invention are no more significant than the change in the method of providing resistance between the commercially sold machines and the actual patent. This latter difference the plaintiffs consider insignificant and merely the "essential equivalent of the patent."

C. The Level of Ordinary Skill in the Pertinent Art

The record on this point is somewhat deficient. The parties have addressed this question in terms of the knowledge and skill of persons in the weight-training industry, persons who are quite

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familiar with exercises, muscular development, and weight-training equipment but who have not been shown to have any particular skills in mechanical engineering. The record does however, contain opinions by both parties' experts as to obviousness. The court chooses to adopt the view of defendant's expert Firman Lyle. We hold that in light of the ancient origin of the lever and the prior application of the lever in the Simmons and Loprinzi machines, the development of the Zinkin machine was well within the ordinary skill of one knowledgeable in the pertinent arts.

Of course, there is no suggestion in the above remarks that an improvement must be obvious merely because it was made by one without particular skills in the pertinent art or craft. But we do hold that this simplistic device in a crowded art is obvious and not patentable. Examination of the Zinkin machine leaves the court with the unshakable belief that any competent mechanical engineer, assigned to design a device for performing a chest press and informed of the prior art, could readily create a machine substantially the same as that of plaintiff's.

Our opinion does not change when we consider the patent as a whole, rather than as a combination of several small changes. The plaintiff has created a useful machine, but one with no surprises, the sum of whose parts are no greater than its individual components. The Zinkin machine is one about which the Supreme Court might say, as it did in *A & P*, "Two and two have been added together, and still they make only four." 340 U.S. at 152, 71 S. Ct. at 130, 95 L. Ed. at 167.

The plaintiff has produced considerable expert testimony that the accurate movement of the handles on the Zinkin machine is a better method of exercising than the straight-line up and down movement found in other chest press apparatus and in the free barbell chest press. The defendants have produced contrary expert opinion.

The plaintiff admits that Zinkin did not have that factor in mind when he designed the machine, but they cite it as an unexpected benefit still deserving of patent protection. We find the evidence of this supposed benefit unconvincing. While several witnesses indicated they felt the arcuate movement more natural and comfortable, others testified to the contrary. We find that either exercise is equally beneficial. The preferences stated for one over the other have no more significance than the fact that some people like one lump of sugar in their coffee but others must have two. The amount of curvature through which the handles actually move in plaintiff's commercially sold machine is very small, and we find the arcuate movement has no real significance. We are unable to find that such movement has any superiority in building muscles.

The court concludes that the Zinkin Patent is void as obvious within the meaning of 35 U.S.C. § 103. For similar reasons, we also hold that the Zinkin patent is void for lack of novelty within the meaning of 35 U.S.C. § 102, as it was anticipated by prior art. We are, of course, aware of the cases that state that anticipation means that every element of the claims is found in a single prior art reference, but we find that both the Simmons and Loprinzi devices satisfy this criterion. The differences in the Zinkin Patent from these prior art references, such as the addition of a table and a different method of providing "stop means", are minor and do not make the doctrine of anticipation inapplicable.

In addition, we find that the defendant's chest press apparatus would infringe the Zinkin Patent if the Zinkin Patent were not void as obvious and lacking in novelty.

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Questions and Notes

1. From the case what do you deduce to be the three main traits an invention must have in order to secure patent protection? Is there a test used by the court to determine if these traits are present?

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2. Section 102 includes novelty requirements and statutory bars to the award of a patent. An invention known or used by others in this country is not new, nor is an invention patented or described in a printed publication (by someone other than the applicant) anywhere in the world. Thus related items must be consulted which constitute what is known as prior art. The question becomes whether these references then anticipate the invention now seeking patent protection. The novelty requirement is distinct from the nonobviousness mandate of section 103. Prior art is also a consideration under that section but in a different way than section 102. Can you see how the analysis of the prior art differs between the sections? How would you advise one concerned over prior art in light of these sections?

3. If JoJo was the first athlete to shoot a jump-shot or dunk a basketball those moves would certainly be revolutionary. Would that improve his chances of securing patent protection? Is there any real difference between that and the fact that he is the only one who can perform his present moves at this time? How would this court evaluate an application by JoJo for patent protection of his moves?

UNIVERSAL ATHLETIC SALES CO. v. AMERICAN GYM CORP.
(UNIVERSAL ATHLETIC SALES CO. II)
546 F.2d 530 (1976)

ADAMS, Circuit Judge

At issue in this case is the validity of a United States patent that pertains to a weight-lifting apparatus. Originally granted to Harold Zinkin, the patent was owned by Universal Athletic Sales Co. at the time of suit. The patent consists of eight claims, and the district court struck down two of them on grounds of anticipation and obviousness. We must decide whether these rulings were warranted.

Two issues underlie the basic question of patent validity now before the Court. The first concerns the controlling weight accorded by the trial judge to the testimony of defendants' principal expert witness, an associate in the law firm representing two of the defendants. Assuming that such testimony deserved little or no weight, as plaintiff maintains, we must then decide the second issue, whether there was nonetheless evidence sufficient to support the decision of the district court.

I

Modern technology has, of course, pervaded almost every province of human endeavor. The Zinkin patent demonstrates the verity of this postulate, for it deals with a somewhat unusual activity — weightlifting. Specifically, the patent relates to the chest-press exercise, one of the cornerstones of the bodily arts. As athletes and physical fitness enthusiasts well known, the chest press enables the zealous practitioner to develop the musculature of his upper torso. Like many modern advances, the Zinkin patent attempts to retain the advantages of old methods, while conferring added benefits with the new....

The patent in this appeal discloses an apparatus which permits an exerciser to simulate, safely and effectively, the chest press exercise. To use the patented apparatus, the exerciser lies upon a table in a supine position and pushes against handles in an upward movement. These handles shift in a fashion analogous to the movement of the bar in the chest press exercise. They extend from a box-like structure which supports and contains the lifting mechanism. The design of the apparatus is such that the handles, the attached bar and the weights cannot strike the exerciser even should he falter. In addition, the Zinkin machine may be utilized without the assistance of a spotter. The patented apparatus thus eliminates the safety hazards posed by the conventional chest press and obviates its manpower requirements as well.

* * *

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Defendants had developed a body-exercising apparatus very similar to that covered by the Zinkin patent. Indeed, the district court found that "the defendants' chest press apparatus would infringe the Zinkin patent if the Zinkin patent were not...." invalid. In their briefs, defendants list several differences between their own device and that of Zinkin. Nevertheless, the defendants do not vigorously contest the determination of infringement by the trial judge. Instead, they rely solely upon his ruling of invalidity, and attempt to buttress his analysis in this respect. At trial, as in the appeal now before us, the primary focus was on whether the Zinkin patent was "anticipated" or made "obvious" by the prior art.

Two references were relied upon by the district court in holding the Zinkin claims invalid: a patent issued to C.A. Simmons in 1871 and a magazine photograph, dated 1950, of a lifting machine designed by Sam Loprinzi. Disclosing a lifting machine for "developing the muscular system," the Simmons device consists of weighted levers which the exerciser apparently lifts and lowers as part of the exercise. The Loprinzi machine is described in the photograph caption as a "super-duper pressing apparatus," but the magazine caption itself provides no information as to the features of the device or how it was to be used. Defendants' principal expert witness attempted to explain its features based solely on his examination of the photograph.

That expert was Firman Lyle, an associate lawyer in the law firm that represented several of the defendants. Controlling weight was given by the district court to his testimony as to obviousness and anticipation: "The court chooses to adopt the view of defendant's expert Firman Lyle." Relying on the Simmons patent, the Loprinzi photograph, and Mr. Lyle's testimony as to these references, the trial court concluded that the two central claims of the Zinkin patent are void, since they were anticipated and made obvious by prior art.

For reasons to be discussed in this opinion, we have decided that the judgment of the district court must be vacated.

* * *

In considering whether the trial judge should have recognized Mr. Lyle as an expert in this litigation, we must first determine which art is the pertinent one. Universal asserts that the relevant art is weight-training, whereas the defendants and the district court selected mechanical engineering. We doubt whether any mechanical engineer could provide meaningful opinions regarding the devices at issue here. For an engineer to assist the trial judge in his search for truth would require that he have at least some familiarity with body-building machines. At the same time, a mere weight lifter probably would be of marginal assistance to a court in evaluating the design facets of exercise apparatus. Consequently, the art germane to the present case is the design of body-training devices.

Having selected the relevant art, we proceed to consider whether Mr. Lyle possessed the qualifications to be an expert in this case. It is apparent that he had little familiarity with the design of weight-lifting machines prior to the present litigation. The record reveals that Mr. Lyle did not undertake, even in connection with this lawsuit, any extensive study of technical references with respect to body-exercising apparatus. Rather, his examination was confined to the elements of prior art selected by defendants' counsel, *i.e.*, the Simmons patent and the Loprinzi photograph. As a result, it is doubtful whether he was suited to serve as an expert here.

* * *

Even assuming that the disciplines designated by the parties were the opposite ones, Mr. Lyle's standing as an expert in this litigation still may be called into question. He had no expertise whatsoever in weight training, as he repeatedly conceded during the course of his testimony. It is also questionable whether Mr. Lyle possessed any skill or knowledge in the field of mechanical engineering. A recipient of a bachelor's degree in *electrical* engineering, he had served for seven years as an examiner in the United States Patent Office and for thirty-five years as a patent attorney for Westinghouse. Although he did handle patent matters relating to turbines, motors and generators,

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which have mechanical features, his patent work primarily pertained to electrical engineering. Experience may vest one with the qualifications of an expert, but Mr. Lyle had only a limited background even in the province of mechanical engineering.

However, since Mr. Lyle may possess skill and knowledge greater than the average layman with respect to mechanical apparatus, we cannot find that the district court clearly abused its discretion in recognizing him as an expert. Nevertheless, coupled with the arguable deficiencies in his qualifications as an expert witness, Mr. Lyle's limited experience with the class of devices present in this litigation should have substantially circumscribed the weight accorded his testimony. The trial court thus erred in attaching controlling weight to the opinions of defendants' expert.

* * *

In analyzing the "scope and content" of the prior art, the trial judge indicated that the only relevant references offered by the defendants were the Simmons patent and the Loprinzi photograph. He properly disregarded exercising machines designed subsequent to the Zinkin patent. Although his opinion does not explicitly discuss the scope of the prior art, the fact that there were only two references suggests that the prior art is quite limited.

The trial judge did attempt to examine the content of the Simmons patent and the Loprinzi photograph. It is evident that he relied considerably upon the testimony of Mr. Lyle in analyzing the latter. As Mr. Lyle's testimony must be discounted, the district court would be hard pressed to evaluate the photograph. Even with Mr. Lyle's assistance, the trial judge appeared to be troubled about the features of the Loprinzi device. Indeed, his opinion reflects uncertainty concerning that apparatus. While the Simmons patent may have been more easily examined, since the defendants did produce detailed patent specifications relating to it, here were unanswered questions regarding its content as well. For example, it is unclear whether the described apparatus could be used for the chest-press exercise. In the absence of expert testimony, other than that of Mr. Lyle, the trial judge could not properly appraise the prior art, narrow in scope as it was. Although there may be instances where a trial court may be able to review prior art references without expert assistance, the devices in this litigation do not lend themselves to such evaluation.

The district court also found that the differences between prior art and the claims at issue were such that the invention is obvious. Nevertheless, because the defendants did not convincingly demonstrate the content of the prior art, we believe that it would be difficult for any court to evaluate differences between that prior art and the challenged claims. Even if it would be possible to do so, there is little evidence to support the conclusion that any variances between defendants' references and the Zinkin claims are "insignificant."

We recognize that there may be some important differences between the prior art and the Zinkin claims. It is questionable, for example, whether either the Simmons patent or the Loprinzi apparatus obviates the spotter requirement of the chest-press exercise, as does the Zinkin device. The caption of the Loprinzi photograph depicts Sam Loprinzi "coaching a pupil in the use of [the] super-duper pressing apparatus." Arguably, Mr. Loprinzi is acting as a spotter as well as a coach in the picture, just as Harold Zinkin performed both roles in his gymnasium before designing his machine. Moreover, it is unclear whether the Simmons and Loprinzi devices circumvent, as does the Zinkin apparatus, the safety hazards posed by the chest press. Technically, there are various differences in design between the prior art and the challenged claims, involving, *inter alia*, the types of handles, the "stops," the requirement of a single bar and the positioning of numerous elements. While there is some doubt whether the variances between the Zinkin claims and the references are so substantial as to defeat the allegation of obviousness, we conclude that the evidence is insufficient to sustain the conclusion of the trial judge that all differences were such as to render the patented device obvious.

With respect to the third mandatory criteria under *Graham*, that is, the level of ordinary skill in the pertinent art, the district court acknowledged that "The record on this point is somewhat

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deficient." Even so, the trial judge declared that "any competent mechanical engineer ... could readily create a machine substantially the same as that of plaintiffs." As discussed above, we believe that the pertinent art is neither mechanical engineering nor weight-lifting, but rather the design of body-exercising apparatus. Not only did the district court fail to select the proper art, but it is questionable whether the evidence submitted by the defendants speaks to the level of ordinary skill in the design of weight-lifting devices.

Assuming that mechanical engineering is the relevant art, we are skeptical whether Mr. Lyle, upon whose testimony the district court substantially relied, could provide meaningful opinions thereon, given his experience in mechanical engineering. The trial judge suggested that the record as to the level of ordinary skill in the pertinent art was "deficient." Having so indicated, he should have refused to invalidate the challenged patent claims as obvious.

This Court need not consider the permissive, or secondary, criteria mandated in *Graham* for determinations of obviousness. For we are convinced that the defendants failed to provide adequate evidence to justify invalidation of the Zinkin claims under section 103. Even if the permissive tests were applied, the commercial success of the Zinkin machine would reinforce our conclusion, as would the "failure to others" to eliminate the safety hazards and manpower requirements of the traditional chest press exercise. Thus, we cannot say that the Zinkin claims are so obvious as to render them invalid.

* * *

IV

While the validity of the Zinkin patent is not completely free from doubt, we do not accept the decision reached by the district court. The district court erred in according substantial weight to the testimony of Mr. Lyle. Without such unjustified reliance on that testimony, the trial judge could not properly interpret the prior art. Because the evidence produced by the defendants simply is not sufficient to rebut the presumption of validity accorded patents, we must reverse the rulings of the district court as to obviousness and anticipation, and sustain claims numbered 3 and 4 of the Zinkin patent.

The judgment of the district court will be vacated and the cause remanded for proceedings consistent with this opinion.

Questions and Notes

1. While an "invention" seeking patent protections must fulfill the requirements of being new, useful and nonobvious, it is clear that the basis of all infringement actions relates to the "claims." The claims are in fact what is essentially patented. Courts often refer to the claims as the "metes and bounds" of the patent. One of the primary ways of analyzing infringement actions is through a comparison of claims. This comparison encompasses not only the subject matter in dispute, but also all relevant information which either was or could have been used by the litigants in ultimately arriving at their invention. This "prior art" as it is called, can involve domestic or international information. The scope of what is deemed applicable prior art often decides the outcome of a case.

2. Claims take many forms. Indeed claims drafting is often said to be an art form in itself. Some inventions have numerous claims while some simply have one. A claim for a pencil might have just one paragraph such as:

A utensil for writing comprising a cylindrical wooden or synthetic shell the core of which consist of some mixture of lead, clay, graphite, or like material and to the base

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of which is attached some rubberized compound which instrument when held in a position will either mark a writing surface or remove marks therefrom.

Claims are not inherently right or wrong nor are they usually unambiguous. Thus a claim for a pencil might be better served if broken into several smaller paragraphs. Suppose JoJo has provided you with both stills and video of his favorite dunk. It is possible to draft claims to this or any other physical activity which will not be deemed obvious?

3. The utility requirement is not an issue in the above cases as is usual in most infringement actions. However conflicting policies may cause tension when the court is forced to determine if the thing claimed is indeed useful. What might those policies be? Does JoJo's athletic prowess seem to meet this requirement? Was the court's analysis of the primary requirements necessary for patent protection consistent in the two cases?

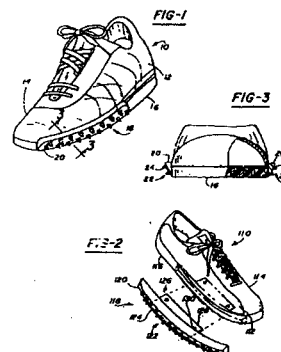
4. The court refers to permissive or secondary criteria. These factors include commercial success, long felt but unsolved needs, failure of others, copying, and unexpected results. These factors have grown in significance over time and have even been referred to by some courts as a required "fourth" element in a § 103 analysis. *See, e.g., Greenwood v. Hatori Seiko Co.*, 900 F.2d 238, 241 (Fed. Cir. 1990). Do these factors offer any help in analyzing the availability of protection for JoJo's moves?

C. Focusing on Prior Art

BADALAMENTI v. DUNHAM'S, INC.
680 F. Supp. 256 (E.D. Mich. 1988)

Memorandum Opinion and Order

FEIKENS, District Judge



I. Introduction

Plaintiff Michael Badalamenti obtained a patent for "a traction device for shoes." U.S. Patent No. 4,335,529, issued June 22, 1982 (plaintiff's patent). After obtaining the patent he contacted athletic shoe manufacturers to interest them in making his shoe. None were. Plaintiff also confronted various manufacturers who were, in his opinion, infringing his patent. He granted licenses to three manufacturers, but is not currently receiving royalty payments from any of the three.

Plaintiff filed his complaint on March 7, 1985, against Hyde Athletic Industries, Inc., a Massachusetts shoe manufacturer, and Dunham's Inc. and Kinney Shoe Corp., two local shoe retailers who sold Hyde's shoe. Hyde defended on behalf of the other two defendants. Plaintiff's complaint alleges that the defendant Hyde's "Monster" athletic shoe infringes his patent. 35 U.S.C. § 271.

* * *

In conducting discovery after remand, having previously sought production of evidence of any prior negotiations of plaintiff with others and receiving no adequate response thereto, defendant Hyde independently determined that plaintiff and his attorneys had negotiated with Nike, an athletic shoe manufacturer, some two years earlier regarding possible infringement by Nike and licensing of

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plaintiff's invention. The Nike negotiations concerned pertinent prior art, in the form of two shoes manufactured by Nike, the "Astrograbber" and the "Waffle Racer."

IV. The Required Analysis

After interpreting the claims of the patent at suit, obviousness is determined by performing the factual inquiries required by *Graham*, taking into consideration any expert testimony on the issue.

A. Claim Interpretation

Preceding the factual inquiry required by *Graham* the court must interpret the claim: what is the intervention claimed? *Panduit*, 810 F.2d at 1567-68, 1 U.S.P.Q. 2d at 1597. The two claims at issue are claims 1 and 6. Claim 1 reads:

A running shoe comprising an outer side, an inner side, a sole, a first traction surface, and a second traction surface, wherein: said first traction surface and said second traction surface are associated with and disposed on the inner side and the outer side, respectively, of the upper portion of said shoe: each of said traction surfaces extends along a side of said shoe from about the forward portion of the heel to about the region where the toe area commences; and each of said traction surfaces is disposed above said sole of the shoe at an acute angle; whereby, when said shoe is rotated about a horizontal axis, at least one of said traction surfaces is brought into contact with the ground surface.

Plaintiff's Patent, col. 4, 11. 12-14.

Claim 6 reads:

The shoe of claim 1 wherein the traction surfaces comprise a plurality of nubs protruding from the traction surface.

Id. at 11. 37-39.

The language of plaintiff's claims at suit are straightforward. I find that plaintiff claims an angled traction surface composed of nubs. The traction surfaces are located above the bottom of the sole at an acute angle to it and are located along both sides of the shoe from the forward portion of the heel to the toe area. They provide traction when the shoe is rotated horizontally. In addition, plaintiff's and his expert witness' testimony have confirmed this meaning....

B. The Graham Analysis

In considering the obviousness issue, the U.S. Court of Appeals for the Federal Circuit requires the *Graham* analysis. *Graham* suggests factual inquiries in four areas:

(1) ascertaining the scope and content of the prior art; (2) determining the differences between the prior art and the claims in issue; (3) determining the level of ordinary skill in the pertinent art; and (4) considering any secondary considerations or objective evidence. In light of the answers to these inquiries, the court must address the question of whether the differences would have been obvious to one reasonably skilled in the pertinent art at the time of plaintiff's invention. *Graham*, 383 U.S. at 17, 86 S. Ct. at 693.

1. Scope and Content of the Prior Art

An analysis of the record shows that the parties have not contested the scope or content of the prior art. The prior art is that cited in the prosecution and the reexamination, introduced by plaintiff. It is: (1) the Bowerman patent; (2) Nike Astrograbber shoe; (3) Nike Waffle Racer shoe; (4) the Cisko patent; (5) the Lyne patent; and (5) the Lotus patent. My discussion of the prior art follows.

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a. Bowerman

The Bowerman patent is for an "athletic shoe for artificial turf with molded cleats on the sides thereof." Bowerman Patent pg. 1. The invention claimed is for an athletic shoe for artificial turf or other hard surfaces "which employs molded cleats of resilient material on the bottom of the shoe and on both sides thereof for greater traction." *Id.* at col. 2, 11. 5-8. The preferred embodiment for the side cleats is:

[A] cover strip 20 of resilient material having a plurality of second cleats 22 molded integral therewith is attached to opposite sides of the shoe upper as well as around the toe portion and heel portion of such upper. These second cleats 22 may each have a polygon-shaped ground engaging surface 24 and greatly improve traction when the athletic shoe is used for sports such as baseball, football or soccer requiring lateral movement and rapid changes in direction during which the shoe is partially twisted or rolled sideways so that such second cleats engage the artificial turf or other hard surface. Patent col. 3, 11. 15-26.

The function of the side cleats is to provide traction during lateral movement or changes in direction:

The second cleats 22 on the side of the shoe upper provide no cushioning during normal straight ahead running, but are *primarily for providing additional traction during lateral movement or changes in running direction.*

Id. at 11. 46-50 (emphasis added).

The specific invention claimed by Bowerman is:

An athletic shoe comprising ... a cover strip extending partially over the outer surface of said shoe upper around the toe portion and along the opposite sides of the shoe upper and having a plurality of second cleats molded integral with said cover strip on the opposite sides of said shoe upper.

Id. at col. 4, 11. 50-66.

b. Nike Astrograbber and Waffle Racer

The soles of the Nike Astrograbber and the Nike Waffle racer ("the Nike shoes") are the same, only the uppers, which are not relevant to the patent in suit, differ (the Astrograbber is a football shoe for use on astroturf, the Waffle Racer is a crosscountry shoe).

The Nike shoes show an angled traction device on the side of the shoes which provides traction when the shoe is rotated. The Nike shoes have a wrapped sole. The sole wraps around the sides of the shoe in the front portion — the ball and toe areas — of the shoe. The sole, including the wrapped portion, has square projections or cleats. The cleats on the wrapped portion of the sole provide traction when the shoe is rotated as the person changes direction. Both plaintiff's expert witnesses, Ali and Montgomery, testified on cross-examination that the Astrograbber provides traction when the shoe is rotated laterally. Ali also testified that it provides traction throughout a thirty to forty-five degree angle.

c. Cisko Patent

The Cisko patent is for a baseball shoe with spikes to prevent slipping during base running. Cisko shows spikes located on the left side of both left and right shoes, located above the bottom of the sole so that they do not engage the ground unless the shoe is rotated. The spikes engage the ground upon rotation of the shoe during base running, and prevent lateral slipping. The drawing shows that the spikes are at an acute angle relative to the sole or ground. Patent, Figs. 4 & 5.

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d. Lyne Patent

The Lyne patent is for an attachment for a golf shoe, to provide traction and balance during the player's stroke. Lyne shows a traction device, or "pivot face," extending beyond the normal inner edge of the sole. The traction device is a continuation of the sole curving upward and outward from it. The traction device is provided with studs which prevent sideways slipping. Patent, p. 2, col. 2, 11. 52-56. As the player pivots during his swing the shoe rotates and the studs on the traction device engage the ground, providing traction. The drawing shows that the studs are at an acute angle relative to the sole or ground. Patent, Figs. 5 & 6.

e. Lotus Patent

The Lotus patent is for "shoes for sports wear," more particularly for playing golf. The Lotus patent shows a beveled or angled side sole at approximately forty-five degrees relative to the sole bottom. Studs are attached perpendicularly to the angled surface so that they also project at approximately forty-five degrees. Lotus, patent, 11. 68-77. The side studs are located on both sides of the shoe, either on the ball of the foot or around the whole shoe. The purpose of the side studs is to prevent the shoes from slipping when they are turned on their edges.

The proper art discussed above is undisputed. The parties do dispute the interpretation of the prior art's claims. This is a matter for the court, to which I now turn.

2. Differences between the Prior Art and Invention in Suit

The second inquiry required by *Graham* is a determination of the differences between the prior art and the claims of the patent at suit. I find that the differences between plaintiff's claims and the prior art are negligible at best, and as a matter of law do not attain the difference which is afforded protection under patent law.

In comparing plaintiff's invention and what the prior art teaches, it is important to make clear what plaintiff does *not* claim in his patent. Plaintiff does not claim one acute angle over another for the side traction surface. Neither does he claim a certain transition between the sole and the side traction surface, such as curved versus angled. Nor does he claim a certain disposition (straight versus curved) of the surface to which the nubs are attached (the drawings show a straight surface). He does not claim any specific size, shape, or disposition of the cleats on the side traction surface.

Plaintiff simply claims an acutely angled traction surface composed of cleats or nubs along the sides of the shoe from forward of the heel to the toe area. This claim must be compared to the prior art in determining the differences between them.

The single most relevant prior art is the Bowerman patent. The differences between the Bowerman patent and the plaintiff's invention are minimal or nonexistent. The Bowerman patent shows an angled traction device composed of nubs along the sides of the shoe. The purpose of Bowerman's patent is to provide greater traction for quick turning laterally. The purpose of plaintiff's patent is to provide lateral traction. Bowerman accomplishes this by nubs or cleats along the sides of the shoe. The Bowerman patent achieves its purpose as the side cleats engage the surface when the shoe is twisted or rolled sideways. Plaintiff's patent achieves its purpose as the traction surface along the sides of the shoe is brought into contact with the ground when the shoe is rotated. In short, Bowerman shows plaintiff's claimed invention — nubs or cleats on an acutely angled traction surface along both sides of the shoe provide traction when the shoe is rotated.

The only difference plaintiff could cite between Bowerman and his patent was the acute angle of the side traction surface. Plaintiff relies solely upon the drawing of the Bowerman patent as his support for the contention that Bowerman, and consequently the prior art, does not teach a traction device at an acute angle. This reliance is misplaced. A fair reading of the claims and specifications of Bowerman shows that it teaches an angled traction surface, and that the drawing showing a traction surface at a right angle to the sole or ground surface is in error. Furthermore, the other prior art

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teaches an angled traction surface located above the sole.

Obviousness is to be determined not only by what the prior art expressly teaches, but by what it would suggest. "The question of obviousness depends, furthermore, on not only what the references expressly teach, but what they would collectively suggest to one of ordinary skill in the art." *Leinoff v. Louis Milona & Sons, Inc.*, 726 F.2d 734, 739, 220 U.S.P.Q. 845, 848-49 (Fed. Cir. 1984), quoting *In re Simon*, 461 F.2d 1387, 1390, 174 U.S.P.Q. 114, 116 (C.C.P.A. 1972).

I find that the angled traction surface is, if not a necessary implication of Bowerman, at the very least clearly suggested by it. The specifications state that in the preferred embodiment for the side cleats the side cleats engage the surface and provide traction upon partial lateral rolling or twisting:

[The side cleats] greatly improve traction when the athletic shoe is used for sports ... requiring lateral movement and rapid changes in direction during which the shoe is *partially twisted or rolled sideways* so that such second cleats engage the ... surface.

Bowerman patent col. 3, 11. 21-26 (emphasis added).

A patentee cannot escape the teaching of a prior art patent based upon an interpretation of the drawing if the specifications are otherwise clear. *Cf. Ziegler v. Phillips Petroleum Co.*, 483 F.2d 858, 869, 177 U.S.P.Q. 481, 488 (5th Cir. 1973), *cert. denied*, 414 U.S. 1079, 94 S. Ct. 597, 38 L. Ed. 2d 485, quoting *Edward Valves, Inc. v. Cameron Iron Works, Inc.*, 286 F.2d 933, 942 (5th Cir. 1961), *cert. denied*, 368 U.S. 833, 82 S. Ct. 55, 7 L. Ed. 2d 34 ("It is well settled that the claims delineate the scope of protection afforded by a patent, not the specific embodiments shown in patent drawings.") This is so especially where, as here, the drawing appears to be in error.

I find that in Bowerman the cleats can engage the surface upon partial lateral movement only if they are at an acute angle to the ground and not at a nearly right angle as shown in the drawing. Plaintiff's expert witness Ali testified that the side cleats at a right angle as shown in the drawing would only engage the ground when the shoe was turned completely on its side. As depicted in the drawing, the side cleats would not be functional.

Even if Bowerman did not teach an acutely angled traction surface, other prior art — the Nike shoes and the Lotus, Lyne, and Cisko patents — teaches an angled traction surface. The Nike shoes show the wrapped portion of the sole disposed at an acute angle to the sole and the ground. The Lotus patent shows an angled side sole at a forty-five degree angle to the ground. The Cisko patent shows spikes located at an acute angle. The Lyne patent as well shows a traction device at an acute angle.

The prior art also shows the angled traction device on both sides of the shoe. The Nike shoes show a wrapped sole on both sides of the shoe on the ball and toe area, and Bowerman shows cleats on both sides all around the shoe. In addition, the Cisko patent, with cleats located on the left sides of the shoes for base running, would suggest to anyone of ordinary skill that if you wanted traction when running to the right, you would merely put spikes on the opposite side of the shoe.

In summary, a comparison of the prior art with plaintiff's invention shows that the difference between them is slight.

* * *

V. Conclusion

I conclude that as a matter of law plaintiff's invention would have been obvious to one reasonably skilled in the pertinent art at the time of its invention.

* * *

The differences between the prior art and plaintiff's patent do not amount to the degree necessary to be afforded protection under the patent laws. The differences are minimal at best. Considering all the evidence, in a light most favorable to plaintiff, drawing all reasonable conclusions in plaintiff's favor, keeping in mind the presumption of nonobviousness and giving deference to the Patent and Trademark Office's decision, I find that defendant has presented clear and convincing

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evidence that plaintiff's patent is obvious. I find that the minds of reasonable men could not differ regarding the obviousness of plaintiff's patent. The differences between plaintiff's invention and the prior art would have been obvious to one reasonably skilled in the art at the time.

Accordingly, IT IS ORDERED that defendant's motion for a directed verdict be GRANTED.

IT IS SO ORDERED.

Questions and Notes

1. In *Badalamenti* the plaintiff's patent was invalidated due to the obviousness of the invention. The court noted that one reasonably skilled in the art would find no difference between the plaintiff's invention and the prior relevant art. How do you determine whether one is reasonably skilled in the prior art? See *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696, 218 U.S.P.Q. (BNA) 865, 868 (Fed. Cir. 1983), *cert. denied*, 464 U.S. 1043 (1984).

2. Is it not impossible for JoJo to achieve patent protection since even the most moderately healthy, coordinated individual is capable of running, jumping, turning and in effect making athletic moves? Should the moves of athletes involved in completely unrelated sports (*i.e.*, track and field, soccer, volleyball) have some bearing on the patentability of JoJo's moves?

3. For a discussion of the issue of analogous art to which an applicant is supposed to be aware see *A.J. Deer Co. v. United States Slicing Machine Company*, 21 F.2d 812 (7th Cir. 1927).

D. A Closer Look at Infringement

**WILSON SPORTING GOODS CO. v. GEOFFREY & ASSOCIATES & SLAZENGER, and
DUNLOP SLAZENGER CORPORATION aka DUNLOP SPORTS**
904 F.2d 677, 14 U.S.P.Q. 2d (BNA) 1942 (C.A.F.C. 1990)

Judges: MARKEY, Chief Judge, RICH, Circuit Judge, and COWEN, Senior Circuit Judge

RICH, Circuit Judge

These appeals, consolidated by agreement, are from judgements of the United States District Court for the District of South Carolina in two actions brought by Wilson Sporting Goods Co. (Wilson) for infringement of United States Patent 4,560,168 ('168), entitled "Golf Ball."

* * *

Background

A. The Proceedings

Wilson is a full-line sporting goods company and is one of about six major competitors in the golf ball business. Among its well-known balls are the Prostaff and Ultra. Dunlop is also a major player in the goofball business. It competes head-to-head with Wilson by selling the Maxfli Tour Limited and Slazenger balls. It sells the Maxfli Tour Limited ball to numerous distributors, but sells the Slazenger ball only to DGA, which distributes the ball to U.S. customers.

On August 2, 1988, Wilson separately sued Dunlop and DGA for patent infringement in the United States District Court for the District of South Carolina. Wilson accused Dunlop of infringing

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claims 1, 7, 15-16, and 19-22 of its '168 patent, and made a general accusation of infringement against DGA.

The Dunlop case went to trial in late February, 1989. After a five day jury trial on the issue of liability, the jury returned special interrogatories finding the asserted claims "valid" (*i.e.*, not proved invalid) and willfully infringed. Judgment was entered upon the verdict, Dunlop's motion for JNOV was denied, and Dunlop appealed. Wilson then moved for summary judgment of liability in the DGA case. It argued that DGA's interests in the second action had been effectively represented by Dunlop in the jury trial, and that Wilson was therefore entitled to summary judgment on the basis of collateral estoppel. The magistrate agreed, Order of May 15, 1989, and entered judgment. DGA appealed.

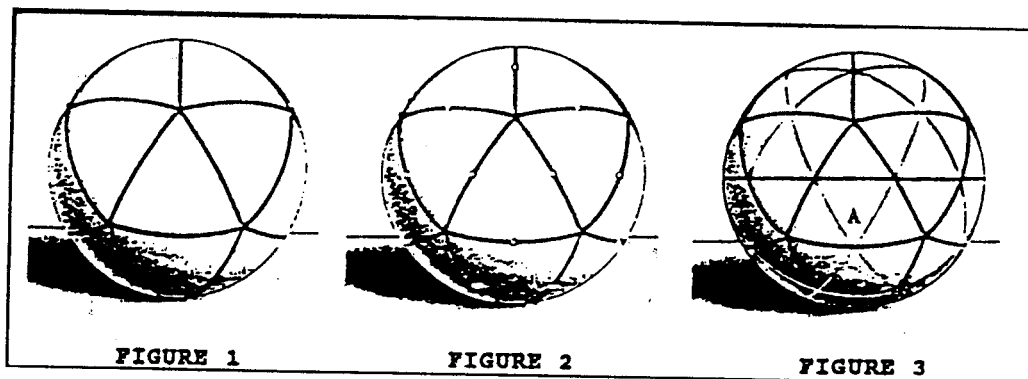
B. The Technology

For more than a century, golfers have been searching for a "longer" ball. As one of the parties put it, "distance sells." Inventors have experimented with numerous aspects of ball design over the years, but as United States Golf Association (U.S.G.A.) rules began to strictly control ball size, weight, and other parameters, inventors focused their efforts on the "dimples" in the ball's surface. According to one witness, new dimple designs provide the only real opportunity for increasing distance within the confines of U.S.G.A. rules.

Dimples create surface turbulence around a flying ball, lessening drag and increasing lift. In lay terms, they make the ball fly higher and farther. While this much is clear, "dimple science" is otherwise quite complicated and inexact: dimples can be numerous or few, and can vary as to shape, width, depth, location, and more.

Wilson's '168 patent claims a certain configuration of dimples on a golf ball cover. The shape and width of the dimples in the '168 patent is for the most part immaterial. What is critical is their location on the ball. The goal is to create a more symmetrical distribution of dimples.

Generally speaking, the dimples in the patent are arranged by dividing the cover of a spherical golf ball into 80 imaginary spherical triangles and then placing the dimples (typically several hundred) into strategic locations in the triangles. The triangles are constructed as follows. First the ball is divided into an imaginary "icosahedron," as shown in Figure 1. An icosahedral golf ball is completely covered by 20 imaginary equilateral triangles, 5 of which cover each pole of the ball and ten of which surround its equator. Second, the midpoints of each of the sides of each of the 20 icosahedral triangles are located, as shown in Figure 2. Third, the midpoints are joined, thus subdividing each icosahedral triangle into four smaller triangles.¹



¹ The central sub-triangles are referred to in the patent claims as "central triangles" (we have labeled one "A"), whereas the three sub-triangles surrounding each central triangle are referred to as "apical triangles." The latter are so named because each of them contains an apex or tip of the larger icosahedral triangle.

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The resulting 80 imaginary triangles are shown in Figure 3. Critically important are the light lines which join the midpoints. As can be seen from Figure 3, they form the arcs of circles which pass completely around the widest part of the ball. There are six such circles, referred to in the patent as "great circles."

All of the claims of the '168 patent require this basic golf ball having eighty sub-triangles and six great circles. Particular claims require variations on the placement of dimples in the triangles, with one common theme — the dimples must be arranged on the surface of the ball so that no dimple intersects any great circle. Equivalently stated, the dimples must be arranged on the surface of the ball so that no dimple intersects the side of any central triangle. *See* Figure 4, below. When the dimples are arranged in this manner, the ball has six axes of symmetry, compared to prior balls which had only one axis of symmetry.²

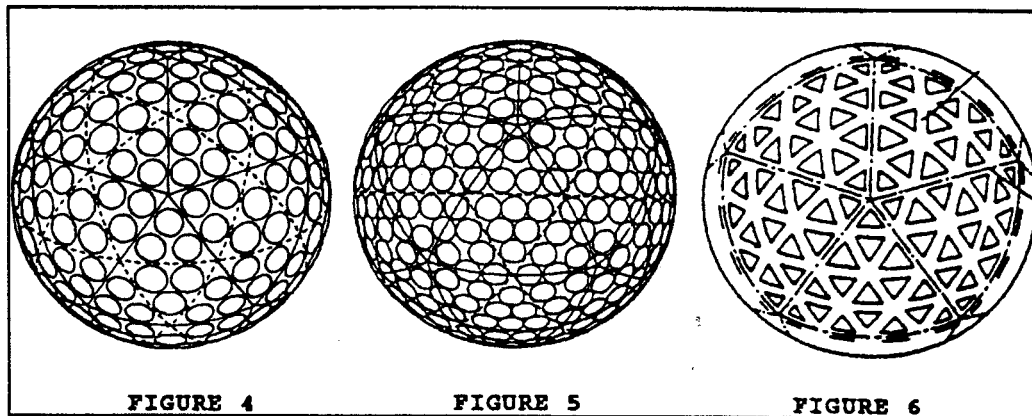
C. Patent and Trademark Office (PTO) Proceedings

Wilson employee Steven Aoyama filed his patent application on April 27, 1984. Twenty-seven claims were presented. All were allowed on the first action without comment by the examiner. The patent issued on December 24, 1985, to Wilson as assignee of Aoyama.

Claim 1, the only independent claim, reads:

1. A golf ball having a spherical surface with a plurality of dimples formed therein and six great circle paths which do not intersect any di[m]ples, the dimples being arranged by dividing the spherical surface into twenty spherical triangles corresponding to the faces of a regular icosahedron, each of the twenty triangles being subdivided into four smaller triangles consisting of a central triangle and three apical triangles by connecting the midpoints [of the sides] of each of said twenty triangles along great circle paths, said dimples being arranged so that the dimples do not intersect the sides of any of the central triangles. [Bracketed insertions ours.]

The remaining 26 claims are dependent upon claim 1. They contain further limitations as to the number and location of dimples in the sub-triangles. Claim 7, for example, requires that all "central triangles [have] the same number of dimples." Other dependent claims locate dimples on the perimeter of the apical triangles, so that dimples are shared by adjacent apical triangles. *See* Figure 5.



² This is Wilson's view of the prior art, which is disputed by Dunlop. The parties agree, however, that every golf ball has at least one great circle which is not intersected by dimples. It is the "mold parting line," a seam around the ball which is created where the two halves of the mold used to make the ball are joined.

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D. The Prior Art

The most pertinent prior art is a 1932 British patent to Pugh, which was cited by the examiner. Pugh teaches that a golf ball can be divided into any regular polyhedron, including an icosahedron. Pugh also discloses sub-dividing each of the twenty icosahedral triangles into smaller triangles. As an example, shown in Figure 6, Pugh divides each icosahedral triangle into sixteen sub-triangles, in contrast to the four sub-triangles required by the '168 patent. (The dimples in Pugh are triangular.) Nonetheless, Figure 6 (which is Figure 3 of the Pugh patent) makes clear that Pugh's sixteen subtriangles are merely further divisions of four larger subtriangles. Claim 3 of Pugh explains his invention (our emphasis):

3. A method of distributing a pattern with substantial uniformity over the surface of a sphere, such as golf ball, which consists in ... [forming] equilateral triangles in the case of the ... icosahedron ..., dividing the sides of the triangles so found into the same number of equal or substantially equal parts and finally joining corresponding points in each pair of sides of each triangle by a series of arcs of great circles, substantially as described.

The prior art also includes several patents to Uniroyal and a Uniroyal golf ball sold in the 1970's. The Uniroyal ball is an icosahedral ball having six great circles with 30 or more dimples intersecting the great circles by about 12-15 thousandths of an inch.³ We discuss it extensively below.

E. The Accused Balls

There are four accused products, all of which the jury found to infringe. The following table summarizes the characteristics of each accused ball:

<u>BALL</u>	<u>DIMPLES</u>	<u>COVER</u>	<u>INFRINGER</u>
Maxfli Tour Limited MD	432	Surlyn	Dunlop
Maxfli Tour Limited HT	432	Balata	Dunlop
Slazenger Interlock 480 (S)	480	Surlyn	Dunlop & DGA
Slazenger Interlock 480 (B)	480	Balata	Dunlop & DGA

The accused balls (collectively "Dunlop's balls") have dimples which are arranged in an icosahedral pattern having six great circles, but the six great circles are not dimple-free as the claims literally require. The number of dimples which intersect great circles and the extent of their intersection were disputed by the parties, but the evidence most favorable to appellee Wilson can be summarized as follows (units of last two columns are 0.001"):

³ Although no physical embodiment of the Uniroyal ball was admitted, there was extensive testimony on its characteristics.

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<u>BALL</u>	<u>DIMPLES</u>	<u>DIMPLES INTERSECTED</u>	<u>DIMPLE RADIUS</u>	<u>EXTENT OF INTERSECTION</u>
MD	432	60	60-80	7.5
HT	432	60	60-80	8.7
Interlock (S)	480	60	60-80	4.0
Interlock (B)	480	60	60-80	4.0

2. Independent Claim 1

Infringement may be found under the doctrine of equivalents if an accused product "performs substantially the same overall function or work, in substantially the same way, to obtain substantially the same overall result as the claimed invention." *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934, 4 USPQ 2d 1737, 1739 (Fed. Cir. 1987) (*en banc*), *cert. denied*, 485 U.S. 961, 108 S. Ct. 1226, 1474, 99 L. Ed. 2d 426 (1988). Even if this test is met, however, there can be no infringement if the asserted scope of equivalency of what is literally claimed would encompass the prior art. *Id.*, *Senmed, Inc. v. Richard-Allan Medical Indus.*, 88 F.2d 815, 821 12 USPQ 2d 1508, 1513 (Fed. Cir. 1989). This issue — whether an asserted range of equivalents would cover what is already in the public domain — is one of law, which we review *de novo*, *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 870, 228 USPQ 90, 96 (Fed. Cir. 1985), but we presume that the jury resolved underlying evidentiary conflicts in Wilson's favor, *see DMI, Inc. v. Deere & Co.*, 802 F.2d 421, 425, 231 USPQ 276, 279 (Fed. Cir. 1986).

This court on occasion has characterized claims as being "expanded" or "broadened" under the doctrine of equivalents. *See, e.g., Intervet American v. Kee-Vet Laboratories*, 887 F.2d 1050, 1054, 12 USPQ 2d 1474, 1477 (literal meaning of claim is expanded under the doctrine of equivalents); *Brenner v. United States*, 773 F.2d 306, 308, 227 USPQ 159, 161 (Fed. Cir. 1985) (describing doctrine of equivalents as "broadening" claims); *Thomas & Betts Corp. v. Litton Sys., Inc.*, 720 F.2d 1572, 1582, 220 USPQ 1, 7 (Fed. Cir. 1983) (claims have a "broadened scope"); *Carman Indus., Inc. v. Wahl*, 724 F.2d 942, 220 USPQ 481, 489 (Fed. Cir. 1983) ("Even with this expansion in the scope of the claims...."). Precisely speaking, these characterizations are inaccurate.

To say that the doctrine of equivalents extends or enlarges the claims is a contradiction in terms. The claims — *i.e.*, the scope of patent protection as defined by the claims — remain the same and application of the doctrine expands the right to exclude to "equivalents" of what is claimed.

* * *

Whether prior art restricts the range of equivalents of what is literally claimed can be a difficult question to answer. To simplify analysis and bring the issue onto familiar turf, it may be helpful to conceptualize the limitation on the scope of equivalents by visualizing a hypothetical patent claim, sufficient in scope to literally cover the accused product. The pertinent question then becomes whether that hypothetical claim could have been allowed by the PTO over the prior art. If not, then it would be improper to permit the patentee to obtain that coverage in an infringement suit under the doctrine of equivalents. If the hypothetical claim could have been allowed, then prior art is not a bar to infringement under the doctrine of equivalents.

Viewing the issue in this manner allows use of traditional patentability rules and permits a more precise analysis than determining whether an accused product (which has no claim limitations on which to focus) would have been obvious in view of the prior art.

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Finally, it reminds us that Wilson is seeking patent coverage beyond the limits considered by the PTO examiner.

In this context it is important to remember that the burden is on Wilson to prove that the range of equivalents which it seeks would not ensnare the prior art Uniroyal ball. The patent owner has always borne the burden of proving infringement, *see Under Sea Indus., Inc. v. Dacort Corp.*, 833 F.2d 1551, 1557, 4 USPQ 2d 1772, 1776 (Fed. Cir. 1987), and there is no logical reason why that burden should shift to the accused infringer simply because infringement in this context might require an inquiry into the patentability of a hypothetical claim. Any other approach would ignore the realities of what happens in the PTO and violate established patent law. Leaving this burden of Wilson does not, of course, in any way undermine the presumed validity of Wilson's actual patent claims. In the present situation, Wilson's claims will remain valid whether or not Wilson persuades us that it is entitled to the range or equivalents sought here.

The specific question before us, then is whether Wilson has proved that a hypothetical claim, similar to claim 1 but broad enough to literally cover up Dunlop's balls, could have been patentable. As we have explained above, Dunlop's balls are icosahedral balls with six great circles, five of which are intersected by dimples. The balls contain 432 to 480 dimples, 60 of which intersect great circles in amounts from 4 to 9 thousandths of an inch. In order for a hypothetical claim to cover Dunlop's balls, its limitations must permit 60 dimples to intersect the great circles by a least 9 thousandths of an inch. Thus, the issue is whether a hypothetical claim directed to an icosahedral ball having six great circles intersected by 60 dimples in amounts up to 9 thousandths of an inch could have been patentable in view of the prior art Uniroyal ball.

On the Uniroyal ball, the extent to which the dimples intersect the great circles is from 12 to 154 thousandths of an inch. Stated as a percentage of dimple radius, the intersection permitted in the hypothetical claim is 13 % or less, and the dimples on the Uniroyal ball intersect by 17 % to 21 %. The number of dimples which intersect the great circles is also similar for the hypothetical claim and the prior art Uniroyal ball. The pertinent hypothetical claim limitation reads on any ball having 60 or less intersecting dimples. This limitation reads on the prior art Uniroyal ball, which has 30 intersecting dimples. If viewed in relative terms, the hypothetical claim limitation reads on any ball which has less than 14 % of its dimples intersecting great circles. Roughly 12 % of the dimples on the Uniroyal ball intersect great circles.

We hold that these differences are so slight and relatively minor that the hypothetical claim — which permits twice as many intersecting dimples, but with slightly smaller intersections — viewed as a whole would have been obvious in view of the Uniroyal ball. As Dunlop puts it, there is simply "no principled difference" between the hypothetical claim and the prior art Uniroyal ball. Accordingly, Wilson's claim 1 cannot be given a range of equivalents broad enough to encompass the accused Dunlop balls.

* * *

Here, we have reversed the judgment of infringement of independent claim 1 solely because the asserted range of equivalents of the claim limitations would encompass the prior art Uniroyal ball.

* * *

Accordingly, in No. 89-15543 we reverse the judgement of infringement by Dunlop and vacate the judgment that the claims were not proved invalid. In No. 89-1555, we reverse the judgment of infringement by DGA, which was based upon the doctrine of collateral estoppel and the judgment against Dunlop in 89-1554, and vacate the judgment that the claims were not proved invalid.

Questions and Notes

1. Remarkably you will find that many of the landmark cases in intellectual property law involve sports related material. The *Wilson* case is typical. Earlier we noted that claims for various inventions are compared in many cases to determine whether infringement has occurred. However, infringement analysis does not end with the question of whether claims in dispute can be found to literally "read on" each other. Even though *Wilson* was not the first case to deal with the "doctrine of equivalents" it did define one unique way of determining equivalency which is still followed by many courts today. The principle of equivalency finds an accused liable when their subject matter, though not falling literally within the plaintiff's claims, functions in the same way to accomplish the same result. How does the doctrine of equivalency effect JoJo's desires to patent his moves?

2. Are the categories of patentable subject matter based on some recognizable valid social policy or are they simply another example of the Congressional lack of foresight so prevalent in many aspects of our laws today?

3. Should golf balls, gym shoes, or weight lifting equipment be deemed new, useful or nonobvious in a vacuum apart from the athletes whose use of these products give them real significance?

4. What distinguishes the items mentioned in the statute and exemplified in these cases from JoJo's moves or other unpatentable subject matter?

E. Patent Practice

Patents are presently valid for a maximum period of twenty (20) years. As a result of securing a patent the holder receives the exclusive right to make, use, or sell the invention in the United States. Anyone else who is involved in any of these activities without first obtaining a license from the patent holder is liable for infringement. See 35 U.S.C. § 271.

Patent law is a dynamic branch of intellectual property that has an image of being closed to the average practitioner. Although many aspects of patent law do involve science and technology, and there is a separate patent bar, neither of these factors should be viewed as totally prohibitive to one interested in the field. A little research will unearth a number of areas where non-patent bar attorneys practice on a regular basis. This is especially true in the area of litigation. As you can see, the statutory language of the patent act is neither scientific or technical.

A wide variety of sporting goods are presently protected, or were once protected, by patents. The following pages include some past and present patents that are regularly encountered in sports. Patents may expire naturally, or be abandoned prior to the completion of their protective term. As you have seen, patents may be invalidated during their term as well. The typical accused infringer works fervently to prove that the plaintiff's patent was improperly secured. If the defendant is unsuccessful in this attempt remedies for infringement can be quite substantial. If the accused is successful and no further proceedings filed the previously patented information is immediately dedicated to the public.