



IDEAS ON INTELLECTUAL PROPERTY LAW

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despite PTAB claim construction error

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**REISING
ETHINGTON**

Intellectual Property Law

755 W. BIG BEAVER RD. – SUITE 1850

TROY, MI 48084

PH. (248) 689-3500

Fx. (248) 689-4071

E-MAIL INFO@REISING.COM

WWW.REISING.COM

Composition-of-matter patents

Can claims drafting involve abstract ideas?

The life sciences and pharmaceuticals industries recently received some reassurance that properly drafted composition-of-matter patents can withstand subject-matter eligibility challenges. In upholding the validity of one such patent, the U.S. Court of Appeals for the Federal Circuit criticized the International Trade Commission's (ITC's) analysis as "too exacting."

ITC DIGS IN

US Synthetic Corporation (USS) filed a complaint with the ITC alleging that several other companies violated the Tariff Act by importing and selling products in the United States that infringe its patent. The patent is for a polycrystalline diamond compact (PDC) used in rotary drill bits for drilling and mining equipment. The ITC determined that the challenged patent claims were infringed.

However, it also found that the claims were patent ineligible under Section 101 of the Patent Act because they related to abstract ideas. The ineligibility ruling was the only thing preventing a Tariff Act violation based on infringement. USS appealed the invalidity ruling to the Federal Circuit.

COURT DRILLS DOWN

Like the ITC, the Federal Circuit applied the two-part *Alice* test (named for the case where it originated) for patent eligibility. In step one, the court determines whether a claim is for a patent-ineligible concept, such as an abstract idea. If not, the inquiry ends. If so, the court then reviews whether the claim includes elements that transform it into a patent-eligible application of the concept.

The Federal Circuit parted ways with the ITC at the first step. It concluded that the challenged claims didn't cover an abstract idea. Rather, they were directed to a specific composition of matter, a PDC, that was defined by its:

- Constituent elements (for example, diamond and cobalt catalyst),
- Particular dimensional information (for example, grain size), and
- Quantified material properties (certain magnetic properties).



ENABLEMENT ARGUMENT UNABLE TO INVALIDATE PATENT

The other companies involved in *US Synthetic* (see main article) alternatively argued that the patent claims were invalid because they didn't satisfy the enablement requirement. This mandates that the patent specification describe the claimed invention in such terms that a person skilled in the relevant field can make and use it.

A patent is "enabling" if, when the application is filed, such a person could read the specification and make and use the invention without "undue experimentation." The International Trade Commission (ITC) found that the other companies hadn't proven that undue experimentation would be necessary to do so.

The Federal Circuit affirmed the ITC on this point. It found that the commission adhered to the long-standing principle that a specification can require a reasonable amount of experimentation to enable a patented invention — with what's reasonable in any case depending on the nature of the invention and the underlying art.

The court explained that it reached its conclusion by reading the patent claims as a whole and in light of the specification. Noting that the dispute in the case revolved around the magnetic properties and their relationship to the PDC, it found that the specification described how the properties correlated to structural aspects of the PDC.

In applying the two-part *Alice* test, a court must properly apply the first step of determining whether a claim is for a patent-ineligible concept, such as an abstract idea.

The ITC, however, had found that the relationship between the claimed magnetic properties and the PDC structure was "so loose and generalized that the claimed limitations appear to be little more than side effects" of a manufacturing process that wasn't part of the claimed invention. The Federal Circuit rejected this characterization of the claims and specification.

ADDITIONAL CRITICISMS

The appeals court also criticized the ITC's apparent expectations for precision between the recited properties and structural details of the claimed composition. The specification expressly provided the correlation between the claimed magnetic properties and the physical characteristics of the

PDC composition. This was sufficient for the Sec. 101 analysis, where the goal is to determine whether a patent claim covers a specific implementation of an idea or just the idea itself. The court emphasized that a "perfect proxy" isn't required between the recited material properties and the PDC's structure.

Further, the Federal Circuit dismissed the ITC's reliance on the specification's use of the word "may" to support its position that the disclosed correlation between the structural and magnetic properties was too weak and equivocal. The commission, it said, overlooked the patent's broader context — including several working examples demonstrating that the correlation was "concrete and meaningful," not merely speculative.

The Federal Circuit took issue, as well, with the ITC's reliance on several of the court's earlier decisions in cases that primarily related to methods or systems found directed to abstract ideas because they performed functions using generic computer components. The court found these cases inapplicable because they didn't relate to a physical composition of matter, like this case.

MINING THE MEANING

While this ruling is particularly welcome news for life sciences and pharmaceuticals patentees, its relevance extends to others, too. It drives home the importance of carefully crafting patents — especially specifications. ▣

Patent cancellation upheld despite PTAB claim construction error

What if the Patent Trade and Appeal Board (PTAB) improperly interprets a claim term in evaluating patentability? It often leads to a reversal or reconsideration of the board's decision. That's not always the case, though, as one patent holder recently learned the hard way in a decision by the U.S. Court of Appeals for the Federal Circuit.

LAYERING THE FACTS

HD Silicon Solutions owned a patent that described a method for creating a local interconnect layer (used in semiconductors) using two films — a first film “comprising titanium nitride” and a second film “comprising tungsten.” The second is deposited over the first to form a metal stack of the layer.

Microchip Technology Inc., a semiconductor supplier, sought inter partes review (IPR) of the patent by the PTAB. Under IPR, the board can reconsider and cancel an already-issued patent based on certain types of “prior art” that made the invention obvious and thus unpatentable.

Microchip contended that all of the patent claims were obvious based on a previous patent. That patent related to a method of forming a local interconnect structure with “tungsten silicide and titanium nitride layers” or “a tungsten layer covered on opposite sides thereof with titanium nitride.”

Before the PTAB, the arguments revolved around the proper construction (or interpretation) of the term “comprising tungsten,” which appeared in all of the challenged patent claims. The PTAB construed it to mean any form of tungsten, including both elemental tungsten and tungsten compounds based on a sentence in the patent that said “[t]he first film may comprise titanium nitride, while the second film may comprise tungsten, *for example*” (emphasis added). It reasoned that elemental tungsten was just “one exemplary embodiment” of a second film.

The PTAB therefore found all but one of the claims unpatentable because they were obvious based on the prior art. HD Silicon Solutions appealed.



CONDUCTING CLAIM CONSTRUCTION

As the Federal Circuit explained, patent claim terms should be interpreted from the perspective of a person of ordinary skill in the relevant field at the time of the invention. The person is deemed to read the term in the context of the particular claim where it appears as well as the entire patent. Evidence outside of the patent can be useful, but it's generally considered less reliable than the patent itself.

The Federal Circuit found that the PTAB had misinterpreted the term “comprising tungsten,” though. The court noted the claims’ “precise language.” For example, the first film is described as comprising titanium *nitride*, while the second film comprises tungsten, without any other element. This suggests, the court said, that the patent uses explicit language to refer to a compound when a compound is intended. Where no such language is included, only the elemental form is intended.

In addition, when referring to the properties of tungsten that make it a desirable material in a local interconnect, the patent specification refers to properties unique to the element itself — properties not found in tungsten compounds. In fact, a tungsten compound is never mentioned in the specification or anywhere in the prosecution history.

The appellate court also faulted the PTAB's reliance on a European patent application publication in its construction. The publication, the board found, taught that the phrase “comprising tungsten” includes tungsten compounds. But, the court pointed out, the publication conflicts with the contested patent's specification, claims and prosecution history. Extrinsic evidence can't be used to vary, contradict, expand or limit claim language from how it's defined in the specification or prosecution history.

Nonetheless, the Federal Circuit affirmed the PTAB's ruling because the board determined that the earlier patent disclosed both elemental tungsten layers and tungsten-silicide layers. Either disclosure would have made the “second film comprising tungsten” limitation obvious. The court concluded that the board's erroneous construction of the claim term was ultimately harmless.

HAZARD ZONE

The case highlights how a patent examiner's improper construction of patent claims can lead to rejection of a patent. In this case, the misinterpretation was “harmless,” but sometimes it can cause great harm. ▣

Foiled by functionality

Expired patents undermine trademark eligibility

A ruling by the U.S. Court of Appeals for the Federal Circuit serves as an important reminder that trademark protection isn't available for functional designs. It also demonstrates how some patents can contradict a would-be trademark holder's claim that its design isn't actually functional.

HARD MATTER

CeramTec GmbH manufactures artificial hip components made from a zirconia-toughened

alumina (ZTA) ceramic that contains chromium oxide (chromia), among other things. CeramTec's patent on the chemical composition credited the addition of chromia for increasing the hardness of ZTA ceramics. CeramTec has also applied for, and received, other patents that spoke to chromia's impact on ZTA ceramic hardness.

The amount of chromia in a ceramic affects its coloring. CeramTec's hip components used a percentage of chromia that made them pink.

CeramTec's patent expired in January 2013. In April 2013, CeramTec was granted registration for two trademarks protecting the color pink used in ceramic hip components.

CoorsTek Bioceramics also manufactures a ZTA ceramic material for hip implants with a chromia percentage that makes the material pink. In 2014, it asked the Trademark Trial and Appeal Board (TTAB) to cancel CeramTec's trademarks because the color pink that CeramTec claimed was functional.

The board sided with CoorsTek, finding that the color pink was functional as it relates to ceramic hip components, and canceled the marks. CeramTec appealed to the Federal Circuit.

IN THE PINK

The functionality doctrine is intended to prevent a manufacturer from controlling a useful product feature. Patent law, not trademark law, is the avenue for granting a monopoly over new product designs or functions for a limited time. If a product's functional features could be used as trademarks — which may be renewed in perpetuity — a manufacturer could obtain a permanent monopoly over such features regardless of whether they qualify for patents.

Four factors are evaluated in determining a trademark's functionality:

1. The existence of a utility patent covering the utilitarian advantages of the design,
2. The availability to competitors of functionally equivalent designs,
3. Facts indicating that the design results in a comparatively simple or cheap method of manufacturing the product, and
4. Advertising materials where the designer touts the design's utilitarian advantages.

On appeal, CeramTec challenged the TTAB's analysis of the first three factors; the fourth was uncontested. The court found that substantial evidence supported the TTAB's findings on the first, third and fourth



factors. CeramTec admitted that its patent for the chemical composition attributed increased hardness levels of ZTA ceramics to the addition of chromia. This provided strong evidence that the resulting pink color was functional under the first factor.

The court also backed the TTAB's determination that the third and fourth factors were neutral. It pointed to the lack of evidence that different-colored ceramic hip components worked equally as well as pink components. Moreover, the court found conflicting evidence on the relative costs of producing pink and nonpink components.

BE HIP TO THIS

Notably, the court rejected CeramTec's assertion that a utility patent isn't evidence of a design's functionality unless the patent explicitly claims that feature. It also dismissed the argument that a utility patent is relevant to the inquiry only if the contested trademark is used for the goods described in the patent. ▣

AI can't "author" copyrightable works

A computer scientist's years-long quest to obtain copyright protection for a work created by artificial intelligence (AI) recently landed in a federal appellate court. The applicant was hoping for a result different from the initial denial, two administrative reviews, and a federal district court ruling. However, the results mirrored those decisions.

LACKING HUMAN TOUCH

According to the applicant, the work was autonomously created by AI, without any creative contribution from a human. He sought to register the work as its owner, with the "Creativity Machine" that generated it listed as the sole author.

The U.S. Copyright Office denied registration because the work lacked human authorship. The applicant requested reconsideration, and the result was the same. The applicant then submitted a second request for reconsideration. The review board rejected the application and a federal district court affirmed the denial, prompting an appeal to the U.S. Court of Appeals for the D.C. Circuit.

PROCESSING TEXT

The Copyright Act requires all work to be authored by a human being. The appeals court acknowledged that the statute doesn't define the word "author," but it found that "traditional tools of statutory interpretation" show that the term refers only to human beings.

The court highlighted the text of multiple provisions in the law that indicate that authors must be humans, not machines. Many of the Copyright Act's provisions, the court said, make sense only if an author is a human being. For example, the ownership provision is based on the author's legal capacity to hold property; therefore, an entity that can't own property can't be an author under the law.

The act also limits the duration of a copyright to the author's lifespan or a period that approximates a human lifespan. The Copyright Office maintains records related to the death of authors of copyrighted works so it can determine when copyrights expire.



In addition, the law's inheritance provision refers to surviving spouses and heirs. Copyright transfers require a signature. Authors are protected regardless of their "nationality or domicile." None of these make sense for machines. Where the law does refer to machines, it refers to them as authors' tools.

Further, before the passage of the Copyright Act of 1976, the Copyright Office consistently interpreted the word to mean a human. The court therefore inferred that Congress adopted that long-standing interpretation when it included the term in the statute.

UNANSWERED QUERIES

Importantly, the court noted that the Copyright Office has granted copyrights on works created by human authors who used AI. But the question of the permissible degree of AI contribution wasn't necessary here because the AI was identified as the sole author. And, as the court said, such line-drawing should be left to Congress. ▣



REISING ETHINGTON

Intellectual Property Law

Since its founding in 1865, Reising has specialized solely in the practice of intellectual property (IP) law. Our clients range from Fortune 500 corporations to entrepreneurs. Our expertise includes:

Automotive	Patents	Prosecution	Electrical
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Medical Devices	Trade Dress	Portfolio Management	Chemical
Industrial Equipment	Trade Secrets	Post-Grant Proceedings	Computer Science
Universities	IP Due Diligence	Legal Opinions	Manufacturing

Did You Know?

Rick Hoffmann was named a **Super Lawyer** for the 20th year, being only one of 147 small and mid-sized law firm attorneys that have made it 20 years in a row. **Corey Beaubien**, **Matt Schmidt**, and **Jim Stevens** were also named Super Lawyers, and **Shannon Smith** was named a Super Lawyers Rising Star.

Reising has been once again named to the **IAM Patent 1000**. The *IAM Patent 1000* shines a spotlight on the firms and individuals that are deemed outstanding in the pivotal area of patent law. IAM undertakes exhaustive qualitative research, identifying top firms and individuals based on their depth of expertise, market presence and sophistication of work. **Corey Beaubien**, **Colin Cicotte**, **Rick Hoffmann**, **Matt Schmidt**, **Jim Stevens**, and **Steve Walmsley** have been specifically recommended.

Matt Schmidt co-authored the US portion of the SPC Commentary, which is the standard book in Europe for Supplemental Protection Certificates (SPCs). SPCs are intellectual property rights that serve as an extension to a patent right. They apply to specific pharmaceutical and plant protection products that have been authorized by regulatory authorities, and serve to offset the loss of patent protection for pharmaceutical and plant protection products that occurs due to the compulsory lengthy testing and clinical trials these products require prior to obtaining regulatory marketing approval.

Shannon Smith was appointed as Academic Liaison for the Intellectual Property Inn of Court Executive Committee. She was also recently elected to the Board of Directors for the Michigan Intellectual Property Law Association.

Mike Adams and **Shannon Smith** joined thousands of US and international colleagues at the annual meeting for INTA (International Trademark Association) in San Diego. The INTA conference is considered the largest and one of the most influential gatherings of Intellectual Property (IP) professional in the world. At this year's conference, Mike and Shannon met with various colleagues from the US, Europe, Africa, Asia, Australia and the Middle East to discuss a wide range of IP related topics, including different strategies for trademark and patent protection and enforcement.