



# ideas on intellectual property law

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in this issue




## **Generally parallel: A contradiction in terms?**

*Being precise -- or not -- in patent claims*

## **Obvious-to-try isn't obvious**

*Patent law's unobviousness requirement*



## **Recycling, refurbishing and renewing**

*How cosmetic changes affect trademarks*

## **Native Americans thrown for a loss**



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# Generally parallel: A contradiction in terms?

*Being precise — or not — in patent claims*

Patent-claim drafting requires defining functional shapes in terms that are faithful to the invention, but not so limiting as to give infringers an escape hatch. To accomplish this delicate verbal balancing act, patent attorneys often rely on words such as “generally” and “substantially.” Similarly, when chemical inventions can tolerate a range of ingredients, they are often claimed in patent applications as “consisting essentially of.” If claim language couldn’t take advantage of these deliberately imprecise expressions, infringers would often escape with minor variations and thus defeat the patent system’s purpose.

## WHAT IS PARALLEL?

In a recent case, the invention was a set of interlocking masonry blocks that can be stacked to form earth-retaining walls which resist ground pressure without requiring any additional support structure, thus facilitating the building of an entire mortarless retaining wall using a single type of masonry block. One of the resulting patents called for the masonry block to have “a bottom face generally parallel to the top face.” The patentee sued a competitor for infringement. The trial court held that — because parallelism is a mathematical concept that is either true or false — the claim language “generally parallel” was limited to the mathematically precise meaning of “parallel.”

On appeal, the patentee argued that the trial court’s construction of the phrase “generally parallel” had effectively read the word “generally” out of the claim entirely, and was therefore improper. The defendant, on the other hand, was understandably happy with the trial court’s narrow reading, which it supported on the ground that modifiers like “generally,” no matter how strong, cannot alter the meaning of a mathematical concept.



The appellate court reversed. The court conceded that the dictionary definition of “parallel” has a single, precise mathematical meaning. But it also noted that the relevant dictionary definition of “generally” reads: “in disregard of specific instances and with regard to an overall picture; on the whole, as a rule.” The court said that because the claim language itself expressly tied the adverb “generally” to the adjective “parallel,” the ordinary meaning of the phrase “generally parallel” envisioned some deviation from exactly parallel.

Courts must consider a phrase as an indivisible whole in claim construction, so ignoring the word “generally” here was improper. The patent’s written description didn’t specify any special definitions for “generally” and “parallel” or even for the whole phrase “generally parallel.” And the patent’s prosecution history didn’t limit these terms’ meanings to a narrow mathematical interpretation. So the appellate court felt justified using dictionary definitions as its claim construction guide. Accordingly, it concluded that the phrase “generally parallel” encompassed some deviation from exactly parallel.

But the appellate court didn’t rest its decision entirely on such “grammar school” reasoning. It noted that words of approximation — such as “generally” and “substantially” — are commonly used in patent claims. Terms such as “approach each other,” “close to,” “substantially equal” and “closely approximate” are ubiquitous in patent claims. And patent examiners and courts have traditionally accepted these usages. While ideally all terms in a patent claim would be definitively bounded, this is rarely the case in claim drafting. So exact mathematical parallelism wasn’t necessary to meet the definition of the claim term “generally parallel.”

### HOW PRECISE?

But imprecision has some limits. In a recent chemical case, the patent explained that aluminum-coated stainless steel has desirable resistance to corrosion and high-temperature oxidation. Passing heated steel strips through molten aluminum produces hot-dip aluminum-coated steel, but it is a challenge to get the aluminum to adhere to or “wet” the steel. Poor wetting can result in subsequent flaking of the aluminum coating.

The inventors solved this problem but discovered their solution didn’t work well unless the aluminum coating was substantially pure. They stated in their patent application that aluminum containing silicon impurities higher than 0.5% by weight decreased the chemical reactivity of the aluminum coating needed to bond with the steel substrate. So the patent application stated that the aluminum coating’s silicon impurity content shouldn’t exceed about 0.5% by weight.


One of the resulting patents contained the following limitation: “the coating metal consisting essentially of aluminum.” When the patentee sued a competitor for infringement, it argued that the court should construe the patent claims broadly enough to cover aluminum coating baths containing up to 10% silicon impurity. But the court interpreted the phrase “consisting essentially of aluminum” to permit only up to 0.5% silicon, which resulted in a conclusion of noninfringement.

## *The appellate court felt justified using dictionary definitions as its claim construction guide.*

The court reasoned that it need look no further than the patent specification, which clearly stated that good wetting is the invention’s goal — as well as the feature that distinguished it from the prior art. The patent specification also clearly stated that “about 10% silicon” is too much and doesn’t achieve that goal, while nearly pure aluminum does and is therefore preferred. And the specification drew a precise line demarking the exact percentage of silicon that the inventors considered to be too much: no more than 0.5% by weight.

Based on that statement, the court concluded that a greater amount of silicon would materially alter the invention’s basic and novel properties, and so the patent claims must be interpreted to permit no more than 0.5% silicon by weight in the aluminum coating.

### WHAT WORDS DO YOU USE?

Using the right words can make or break a patent claim. Terms which accurately define your invention are essential to ensure that your patent claim is accepted by the Patent and Trademark Office, but a little terminological looseness is helpful in minimizing the risk that an infringer can avoid the claims. 

# Obvious-to-try isn't obvious

## Patent law's unobviousness requirement

**N**ovelty and unobviousness are two prerequisites for a patent. Novelty means that a patent won't be granted if an invention is fully disclosed in the "prior art." An invention must be something never before known. But an invention must also be unobvious. So even if an invention wasn't previously known, the Patent and Trademark Office (PTO) will deny a patent for a modification of the prior art which is so minor that the modified form was obvious to those of ordinary skill in the relevant field when the alleged invention was made.

### OBVIOUSNESS DEFINED

Technological breakthroughs not foreshadowed by the prior art are by definition unobvious. On the other hand, a minor modification may be obvious — even if the prior art doesn't disclose it outright — if the prior art suggests to someone of ordinary skill in the relevant technology that the modification would solve the problem at hand.

If an entire invention is disclosed in a single prior-art publication or "reference," then the invention isn't novel. But part of the invention often appears in one reference and another

part appears in another reference. Then neither reference individually negates novelty, because neither one alone demonstrates that the entire invention was known. But the patent examiner may reject a patent application by arguing that it was obvious to a person of ordinary skill in the relevant technology to combine the two references' teachings.

For example, for a chemical invention involving the marriage of two compounds, one compound may be disclosed in reference A and the other in reference B. But that alone isn't enough to support a rejection due to obviousness — at least one reference must teach or suggest that it is advantageous to combine the two compounds. Moreover, it isn't enough that the prior art makes it obvious to *try* the invention — it must make the invention *itself* obvious.

### CLEANING METHOD DISCLOSED

In a recent patent case, the invention consisted of a method of cleaning unwanted residues from an integrated-circuit chip's surface. This invention involved exposing the unwanted residue to a plasma formed from ammonia and oxygen.



4

## How obvious is it?

Here's the relevant language used in the Savas patent. You decide. Is it "obvious," or merely "obvious to try"? (Keep in mind:  $\text{NH}_3$  is ammonia, and  $\text{O}_2$  is oxygen.)

"... other gases ... may be added to oxygen in small concentrations to attack specific chemical residues ... Any one of a variety of additives may be selected depending on the composition of [the materials] and the etch process used. Common additives include Ar, He,  $\text{SF}_6$ ,  $\text{Cl}_2$ ,  $\text{CHF}_3$ ,  $\text{C}_2\text{F}_6$ , CFC's,  $\text{N}_2$ ,  $\text{N}_2\text{O}$ ,  $\text{NH}_3$ ,  $\text{H}_2$ , water vapor, or the like. For instance, after a polysilicon etch process, ...  $\text{CF}_4$  is preferably added to the  $\text{O}_2$  gas in concentrations of 0.2% to 10% in order to enhance ... removal."

The patent examiner found a prior-art patent (the Molloy patent) that disclosed a method of cleaning surface residues during integrated-circuit chips' manufacture by exposing the surface to a mixture of oxygen and amine gases. Amines are chemically related to ammonia — and may even be manufactured from ammonia as a starting product — but they aren't the same as ammonia. So the Molloy reference alone wasn't enough.



But the examiner combined Molloy with another prior reference (the Savas patent) that also related to cleaning surface residues during integrated-circuit-chip manufacture. The Savas patent stated that numerous other gases, including ammonia, could be added to oxygen in small concentrations to attack specific chemical residues. (See “How obvious is it?” on page 4 for the Savas patent’s actual claim language.)

So, because Savas discloses both ammonia and oxygen, it would seem that Savas alone might negate novelty. But the examiner, instead citing Molloy’s disclosure of oxygen in combination with Savas’ disclosure of ammonia, argued that together these two references demonstrated obviousness. On that basis the examiner rejected the patent application. But the inventor appealed to the PTO’s Board of Patent Appeals and Interferences, and it reversed the examiner’s rejection.

### **PATENT REFERENCE SUGGESTED**

On appeal the inventor first argued that Savas disclosed so many different gases to combine with

the oxygen that it wasn’t obvious to focus on the ammonia. Unpersuaded, the Board of Appeals held that disclosure of numerous effective combinations doesn’t render any particular one of those combinations less obvious.

But the board did agree with the inventor on another ground of appeal: Savas had suggested only that ammonia be *tried* — not that it would *succeed*. The board found no specific teaching in Savas that any of the additives for mixing with oxygen are suitable. It emphasized the tentative nature of the language used by Savas, which stated only that the additives *could* be selected depending on the material’s composition and the process used, not that they *should* be selected.

### **OBVIOUS TO TRY**

While conceding that this was a close call, the board concluded that no more than an “obvious to try” standard was met by the examiner’s rejection. So it allowed the patent. 💡

# Recycling, refurbishing and renewing

## *How cosmetic changes affect trademarks*

If a company refurbishes another manufacturer’s product, can it resell the product with the manufacturer’s original trademark? And do cosmetic changes and product reprocessing differ? A recent case took a swing at these questions.

### **RECYCLING GOLF BALLS**

Acushnet manufactures and sells golf balls. Nitro obtains and sells used Acushnet golf balls at a discounted rate, including some that it calls “recycled” balls. These are found in relatively good condition,

needing little more than washing and repackaging for resale. Recycled balls represent approximately 30% of Nitro’s sales. Acushnet doesn’t object to these sales.

Nitro also sells balls with stains, scuffs or blemishes that require “refurbishing.” The refurbishing process includes removing the base coat of paint, the clear-coat layer, and the trademark and model markings, without damaging the balls’ covers. They are then repainted, a clear coat is added, and



the original manufacturer's trademark is re-affixed. Nitro applies the legend "Used and Refurbished by Nitro" directly to each refurbished ball, and packages them in containers displaying the following disclaimer:

**ATTENTION**

**USED/REFURBISHED GOLF BALLS:** The enclosed contents of used/refurbished golf balls are USED GOLF BALLS. Used/Refurbished golf balls are subject to performance variations from new ones. These used/refurbished balls were processed via one or more of the following steps: stripping, painting, stamping and/or clear coating in our factory. This product has NOT been endorsed or approved by the original manufacturer and the balls DO NOT fall under the original manufacturer's warranty.

Acushnet sought to preliminarily enjoin Nitro's use of the Acushnet trademarks on refurbished balls. It asserted that the refurbishing process produces a golf ball that bears no resemblance to a new Acushnet product in performance, quality or appearance, and that Nitro's refurbishing process so alters the basic composition of Acushnet's golf balls that it's a misnomer to call the ball by its original name. The trial court denied the preliminary injunction and Acushnet appealed.



## RENEWING AND REFURBISHING

Some years ago, the Supreme Court decided a case involving used Champion spark plugs that were repaired, reconditioned, repainted and then resold with the label "Renewed." The issue was whether the courts should require removal of Champion's name from the plugs.

The Supreme Court in that case held that parties can sell used and repaired goods under the original manufacturer's trademark without deceiving the public — so long as the accused infringer attempts to restore "so far as possible" the goods' original condition and makes full disclosure about the goods' true nature. When the trademark is used in a way that doesn't deceive the public, the Supreme Court said no sanctity in the trademark prevents its being used to tell the truth — that is to say truthfully that Champion was the original manufacturer. This results in the second-hand dealer getting some advantage from the manufacturer's trademark, and is permissible only if the manufacturer isn't identified with the product's inferior qualities.

Acushnet tried to distinguish the *Champion* case. It argued that Nitro doesn't restore "so far as possible" the used balls to their original condition, but rather masks the balls' condition, and this increases the likelihood that customers will associate the inferior performance with Acushnet. It also argued that the repainting of the spark plugs in the *Champion* case was merely cosmetic,

while Nitro's process of stripping and repainting changed the reprocessed balls' fundamental attributes. Moreover, Acushnet argued that Nitro's refurbishing process — not normal wear and tear — degraded Nitro's used golf balls' quality.

### **COSMETIC OR NOT**

But the court disagreed with these distinctions. In *Champion*, the reconditioning involved removing burned and pitted portions of the center electrodes,

welding new metal to the side electrodes, wearing away the plug's porcelain insulators through sand-blasting, and then cleaning and painting the spark plug. Thus, the refurbishing process in *Champion* wasn't merely cosmetic and couldn't be distinguished from the present case on that basis.

Result: the *Champion* Supreme Court precedent controlled the result in the *Nitro* case, and Nitro was allowed to use Acushnet's trademarks. 💡

## **Native Americans thrown for a loss**

After years of litigation, a court decided that seven Native Americans failed to prove that the name of the Washington Redskins professional football team is disparaging to their ethnic group — and that they waited far too long to bring up the matter.

Trademark law forbids federal registration of trademarks that consist of immoral or scandalous matter, or that may disparage living or dead persons. Based on the disparagement provision, the Native Americans asked the Trademark Trial and Appeal Board (TTAB) to cancel several "Redskins" trademark registrations on ethnic disparagement grounds — and were initially successful.

But the football team persuaded a federal court to reverse the decision. The court considered itself obligated to uphold the TTAB's decision unless not supported by substantial evidence. But it ruled that the TTAB's decision didn't meet even this lenient test. Moreover, the football team won despite the court's finding that the Native Americans had to prove their case before the TTAB by only a preponderance of the evidence, and that the burden was on the football team to demonstrate that the substantial evidence test wasn't met.

Why did the court reverse the TTAB's decision even though those procedural factors were stacked against the football team? Two reasons.

First, the court found that the correct test was whether a substantial composite of the Native American population considered the trademarks disparaging to them. But the TTAB mistakenly took into account the entire general population's view. The court also noted that the seven Native American plaintiffs felt strongly about the matter, but said that their individual views weren't probative of the views of 2.41 million Native Americans.

Perhaps more importantly, the court found the plaintiffs had waited too long to complain — the so-called laches defense. The football team has used its Redskins mark since the early 1930s, and the plaintiffs knew about the mark since the 1940s. The court recognized that laches often isn't allowed as a defense in trademark cases if public interest matters are involved, because the public shouldn't have to live with trademarks that aren't in the public interest simply because individual litigants were slow to object. But the court couldn't agree that the football team's trademarks should be subject to attack without any time limit.