

PTAB Decision Guides On What Routine Optimization Is Not

The [U.S. Patent and Trademark Office](#) and U.S. patent practitioners have been beset with a litany of somewhat vague and disordering decisions on obviousness from the courts, beginning with the 2007 *KSR International Co. v. Teleflex Inc.* decision from the [U.S. Supreme Court](#).^[1]

The USPTO has incorporated many of these decisions into the Manual of Patent Examining Procedure, and the practical application may be more restrictive than the courts intended. Practitioners often face obviousness rejections based on little more than the existence of the claim elements in the art, even in chemical practice.

The current version of the MPEP, Section 2143,^[2] provides a nonexhaustive list of exemplary prima facie obviousness rationales, (A) to (G), which share a common requirement of predictability. Complicating this relatively common situation: Neither the examiner nor the U.S. representative is always sufficiently aware of the predictability of the technology, nor has the concept of predictability been reasonably explained by the courts.

A frequently encountered rationale applied against selection inventions, i.e., new combinations of known elements from the art giving an often unexpected effect, is the obvious-to-try rationale, which requires finite choices.

A layman may recognize that all real-world scenarios present only finite choices. Thus, the meaning of finite must be parsed from high court^[3] superlatives and sophistry based on limited attempts in the [U.S. Court of Appeals for the Federal Circuit](#) to make practical sense of the abstraction.

For example, the Federal Circuit indicated in the 2010 *Rolls-Royce PLC v. United Technologies Corp.* decision, incorporated into the MPEP as Example 8 of the MPEP's Section 2143(I)(E), that not all modifications are obvious to try, ostensibly based on the vast number of modifications possible to a sweep angle and a lack of indication in the art to modify as claimed.^[4]

Rolls-Royce was a relatively safe decision, as it involved a technology likely allowing the most permutations in the human experience, practically limited only by atomic size and metal workability. However, real-world scenarios typically involve tens to tens of thousands of choices, not infinite choices in a mathematical sense. Accordingly, finite choices for the USPTO must be something on the order of tens, hundreds or thousands.

Further, research chemists will generally accept that few reactions or combinations of organic chemicals are predictable, at least in yield, unless such reactions or combinations have been experimentally tested before and often reproduced. However, for an applicant to receive a patent, the invention must be new, i.e., unknown anywhere in the ocean of scientific and patent literature accumulated over the history of mankind.

Thus, the patenting concept that combining several components could function predictably, means something less than simply requiring testing. In sum then, what the KSR court advised could be obvious under the obvious-to-try rationale must be neither predictable nor substantially limited.

Adding to this situation, it is relatively common for USPTO practitioners to apply hindsight reasoning at the USPTO, which, despite Supreme Court representations,[5] is rarely dispatched with more than Form Paragraph 7.37.03 — Unpersuasive Argument: Hindsight Reasoning — by USPTO examiners.[6]

Thus, the Supreme Court's administration of common sense consists of a single form paragraph, cut and pasted into office actions responding to applicant arguments on impermissible hindsight.

These concepts of finiteness and predictability predominate obviousness considerations at the USPTO, and are often beset hindsight logic based on the fact that patent searches involve a reading of the invention disclosure, rather than purely searching the prior art, as the rather absurd legal concept of novelty presumes applicants to have done.[7]

This permissive state of obviousness findings was taken up by USPTO's Patent Trial and Appeal Board in *Ex parte Sturgis* when, on March 1, the PTAB reversed an examiner's obviousness rejection of claims for failing to sufficiently establish obviousness via routine optimization. The reversal was mainly based upon plural selections being claimed without any particular directions on choosing in the prior art and an unpredicted effect based on the cited art.

The claims in question related to a deodorant-antiperspirant composition recited in two independent claims, claims 1[9] and 13,[10] distinct in claim 1's requirement of stearyl alcohol in its structurant, and in their final clauses reciting different (encompassed) weight percentages of perfume, claim 1's recitation of a cyclodextrine perfume complex with certain stability properties and Mw, relative to claim 13's recitation of specific perfume molecules.

The prior art cited against the claims was the applicants' own prior work, U.S. Patent Application Publication No. 2008/0215023 — Timothy Alan Scavone, Michael Jude Lebanc, Lowell Alan Sanker and Adran Gregory Switzer — and a secondary reference not of the applicant's invention.

The rejection relied upon the Scavone disclosure that one or more fragrance materials can be complexed to cyclodextrin, in describing that

[a] representative, non-limiting, list of fragrance materials that may be complexed with the cyclodextrin includes ... and mixtures thereof.

The examiner characterized Scavone as describing "greater than about 75%," the percent of fragrance complexed with cyclodextrin, and that there was overlap with some of the claimed fragrances.

Scavone actually described that

[i]n accordance with at least some of the preferred embodiments, the percent of fragrance material that is complexed with cyclodextrin is greater than about 75%, in some instances greater than about 90%, and in other instances greater than about 95%.

Scavone also described "a representative, non-limiting, list of [approximately 200] fragrance materials that may be complexed" with cyclodextrine.[10]

That is, Scavone described a relatively long list of options, not including the majority — nine of 13 — of the compounds recited in claim 13 of the appealed application.

Of the compounds recited in claim 13, Scavone disclosed:

- Ethyl vanillin,
- Vanillin,
- Benzaldehyde,
- Dimethyl anthranilate, and
- 3, 6-nonadien-1-ol, or nonadienol.

Not disclosed were:

- Ethyl-2-methyl butyrate;
- Beta gamma hexanol;
- Isoamyl acetate;
- Amyl acetate;
- Cis-3-hexenyl acetate;
- Gamma-octalactone;
- Isoeugenyl acetate;
- Canthoxal; and
- Triplal.

The applicant argued that Scavone failed to teach any particular reason to select certain perfume raw materials, failed to teach anything about the specific structure or parameters of individual perfume raw materials, and failed to designate a typical, preferred or optimum species of perfume raw materials.

The applicant also argued that Scavone failed to describe the properties of perfume raw materials and that there was no established predictability for the technology, noting that Scavone did not identify, disclose or discuss the advantageous properties of perfume raw materials based on their complex stability constant, ClogP, weight average molecular weight, or ability to be released from an anhydrous antiperspirant or deodorant stick when complexed with cyclodextrin.

The PTAB acknowledged that Scavone's paragraph 24 did teach the amount of perfume in the cyclodextrin perfume complex "can vary greatly depending on the manufacturing techniques employed," and that Scavone indicated the percent of fragrance material

associated with the interior of a cyclodextrin complex — as opposed to being on the exterior region, i.e., a selection — is results effective.

However, in the PTAB's view, Scavone did not disclose that where more than one fragrance is complexed with cyclodextrin, different concentrations of certain fragrance materials in that complex provide different results in the product. That is, the PTAB took the position that the effect of combining the selected elements — particularly scent molecules with the cyclodextrin, in the particular amounts — in the applicant's claim was unpredictable.

Citing the 2017 *In re: Stepan Co.* decision in the Federal Circuit, the PTAB restated that

a conclusion of obviousness cannot stand where there is a failure to provide an appropriately supported explanation why it would have been routine optimization to select and adjust particular percentages of a claim element.

The reversal in *Ex parte Sturgis* follows the opinion of *In re: Stepan Co.* in that an examiner's obviousness rationale based mainly on the mere existence of a set of choices in the prior art, even where a portion — but not all — of the choices are known to be result effective, can be insufficient for a finding of obviousness in unpredictable arts.

Practitioners can point to such decisions in traversing the otherwise permissive U.S. obviousness standards tolerating finite choices and suspicions as predictability.

A clear basis or motivation in the art should be identified and articulated by the examiner for selecting and adjusting contents of compositions recited in claims, in order for there to be routine optimization.

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[1] **KSR Int'l Co. v. Teleflex Inc** , 550 U.S. 398, 82 USPQ2d 1385 (2007)

[2] Manual of Patent Examining Procedure (MPEP) Ninth Edition, Revision 10.2019, Last Revised June 2020

[3] The Supreme Court stated in *KSR* that the Federal Circuit "erred in concluding that a patent claim cannot be proved obvious merely by showing that the combination of elements was obvious to try. When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill in the art has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense." *KSR*, 550 U.S. at 402-403, 82 USPQ2d at 1390.

[4] **Rolls-Royce, PLC v. United Tech. Corp** , 603 F.3d 1325, 95 USPQ2d 1097 (Fed. Cir.

2010)

[5] The Supreme Court asserted in KSR that the Federal Circuit "drew the wrong conclusion from the risk of courts and patent examiners falling prey to hindsight bias," since "[r]igid preventative rules that deny recourse to common sense are neither necessary under, nor consistent with, this Court's case law." KSR, 550 U.S. at 402-403, 82 USPQ2d at 1390.

[6] ¶ 7.37.03 Unpersuasive Argument: Hindsight Reasoning: In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Examiner Note: This form paragraph must be preceded by form paragraph 7.37.

[7] As theoretical representatives of persons of ordinary skill in the art, USPTO examiners could rationally be expected to "know" the prior art on a similar level to the standard to which applicants are held.

[8] *Ex parte Sturgis* (Appeal 2021-002857; USSN 15/696,282)

[9] Claim 1. An anhydrous stick composition, comprising:

- a) a deodorant active, an antiperspirant active, or a combination thereof;
- b) a carrier;
- c) a structurant comprising stearyl alcohol; and
- d) a cyclodextrin perfume complex, comprising cyclodextrin and a perfume, wherein the perfume comprises perfume raw materials and wherein from about 40% to 50%, by weight of the perfume, of the perfume raw materials have: a complex stability constant of about 3.0 or less, a ClogP of about 2.5 or less; and a weight average molecular weight of about 200 Daltons or less.

[10] Claim 13. An anhydrous stick composition, comprising:

- a deodorant active, an antiperspirant active, or a combination thereof;
- a carrier;
- a structurant; and
- wherein from about 40% to 70%, by weight of the perfume, of the perfume raw materials, are selected from the group consisting of: ethyl-2-methyl butyrate; beta gamma hexanol; iso amyl acetate; amyl acetate; cis-3-hexenyl acetate; gamma-octalactone; ethyl vanillin; vanillin; benzaldehyde; dimethyl anthranilate; isoeugenyl acetate; canthoxal; 3,6-nonadien-1-ol, triplal; and combinations thereof.

[11] Scavone's ¶¶ [0044] and [0045] can be seen here <https://patents.google.com/patent/US20080215023A1/en?q=US+2008%2f0215023+A1+> .