ATTENTION COPYRIGHT EXPERTS: PATENT CHANGES THAT MUST BE ON YOUR RADAR

by AMY L. LANDERS*

This article explores recent changes in patent law that are specifically relevant to copyright practitioners. It highlights three major developments: the Federal Circuit's ruling in LKQ Corporation v. GM Global Technology Operations L.L.C., which revised the obviousness standard for design patents; the U.S. Patent and Trademark Office's (PTO) new guidance on inventorship for AI-assisted claims; and emerging state laws restricting broad patent assignment clauses in employment agreements. The LKQ decision aligns design patent standards more closely with those for utility patents, increasing scrutiny of prior art and making design patents more challenging to obtain. The PTO's AI inventorship guidance clarifies that AI cannot be named as an inventor, though AI-assisted human creations still qualify for patents. Meanwhile, New York has joined the growing resistance to employer claims over employee-generated inventions. Together, these changes demonstrate the need for copyright professionals to maintain knowledge of developments in patent law.

INTRODUCTION

Copyright lawyers have been required to expand their knowledge base to accommodate the significant changes in the law and the creative environment. Keeping up with the major developments in this field seems like more than a full-time job. Yet, the intellectual property system is interconnected. One's copyright expertise is incomplete without understanding significant changes, in this case, patent law. For those whose work touches on design protection, AI-assisted content (including software), or employee-created inventions, these developments

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are particularly important. These examples below focus on the most urgent substantive areas of overlap with copyright law.

As an overview, the Federal Circuit has shifted the analysis and evidentiary standards for the obviousness standards for design patents in *LKQ Corporation v. G.M. Global Technology Operations L.L.C. (LKQ)*.[1] Obviousness measures whether a design claim is sufficiently inventive to warrant a patent—that is, whether it represents a significant advance from the prior art. In *LKQ,* the Federal Circuit sitting en banc broadened the scope of available prior art for the application of this standard. This change is likely to herald the beginning of more rigorous validity standards for design patents going forward. At a minimum, it suggests that the court will be more willing to incorporate utility patent standards into the design patent system. Second, the U.S. Patent & Trademark Office (PTO) has issued two significant guidance documents for claims created with the assistance of artificial intelligence (AI). One considers inventorship. Although these parallel the U.S. Copyright Office's standards in some respects, there are notable departures. Another considers the impact of AI-assisted claims on the patentable subject matter doctrine. Here, the impact on the legal framework is more subtle yet just as important. Finally, the State of New York has added to the ongoing trend of legislation that prevents blanket assignments of patentable inventions in employment agreements. Those who consider protection in overlapping subject matter areas should understand these changes.

This short article will look at both of these, with an eye to what copyright experts should monitor. And if you are not yet convinced, here's a small piece of news: the USPTO is actively seeking non-science experts – artists and art teachers – to become design patent practitioners because of their experience with *artistic designs*.[2] The intersection between patents and copyright has arrived. And the USPTO along with the Copyright Office keep putting out their thoughts on AI. We can no longer remain in our silos.

I. LKQ: DESIGN PATENTS' OBVIOUSNESS STANDARD

Despite the availability of copyright law for expressive design, design patents were specifically made to reward insight and problem-solving. We think of creativity as housed in copyright. But to say that *imaginative* design is an essential contribution to a product's value is an understatement. Such work reaches beyond the surface to aesthetic form.[3] An object's appearance conveys meaning using shape, features, or material.[4] Good design can guide users to interact with the product successfully.[5] Better works require investment, research, and iterative

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[1] LKQ Corporation v. GM Global Technology Operations LLC, 102 F.4th 1280 (2024).

[2] https://www.federalregister.gov/documents/2023/11/16/2023-25234/representation-of-others-in-design-patent-matters-before-the-united-states-patent-and-trademark

[3] *See generally* Amy L. Landers, The *Problem of Design Patents: Representation and Subject Matter Scope,* 30 TEX. INT. PROP. L. J. 185, 187 (2022)(defining "design problems").

[4] *See generally* Oya Demirbilek and Bahar Sener, *Product Design, Semantics and Emotional Response,* 46 ERGONOMICS 1346 (2003).

[5] *See generally* Landers, *supra* note 3, at 187 (defining "design problems").

prototyping to solve aesthetic problems. The recent changes in the obviousness standard for design patent law warrant scrutiny for anyone involved with the protection of created objects. This occurred in *LKQ Corporation v. G.M. Global Technology Operations L.L.C. (LKQ),* which changed the obviousness standard for design patents.[6]

A. Protecting Design

Creative design touches both copyright and design patent protection. The U.S. Supreme Court's *Star Athletica* expanded the availability of copyright protection for expressive objects.[7] That opinion found that copyright protects product features if, once identified and imagined apart from the article, would qualify as a pictorial, graphic, or sculptural work on its own or when fixed in some other tangible medium."[8] In that case, the opinion found that elements of a cheerleading uniform (various lines, chevrons, and colorful shapes) met this standard because they could be imaginatively removed from the garment and applied to another medium without replicating the clothing.[9] Subsequently, lower courts have applied *Star Athletica* to open the door to copyright protection for such items as a car seat cover, a lampshade, and even a Halloween costume.[10] In effect, the *Star Athletica* decision broadened the possibility for copyright protection for objects with expressive attributes. But we still have design patents.

A design patent covers a "new, original and ornamental design for an article of manufacture."[11] This system is aimed to protect the visual aspects of functional products. For these, a product's aesthetic features are protected, but not its utilitarian ones.[12] As some examples, protectable features include "surface indicia," such as images, embossment, or prints on functional objects, the product's shape or configuration, or a combination of both.[13] This statute has been applied broadly and has been held to encompass furniture, dishware, handbags, the shape of Apple's iPhone, and icons on a computerized display, among other

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[6] LKQ Corporation v. GM Global Technology Operations LLC, 102 F.4th 1280 (2024).

[7] Star Athletica, L.L.C. v. Varsity Brands, Inc., 580 U.S. 405, 137 S. Ct. 1002 (2017); Thomas S. Key, *Trudging through the Thicket: Copyright Protection for Designs of Useful Articles in the Wake of* Star Athletica*,* 49 AIPLA Q. J. 55 (2021) (suggesting that the U.S. Copyright Office is more amenable to protecting designs after *Star Athletica* was decided).

[8] *Id.* at 417.

[9] *Id.*

[10] Silvertop Associates Inc. v. Kangaroo Manufacturing Inc., 931 F.3d 215 (3rd Cir. 2019)(costume); Liaigre, Inc. v. California Furniture Coll., Inc., 2023 WL 4316881 (C.D. Cal. 2023)(finding a material issue of fact on separability of certain furniture designs); Corinna Warm v. Innermost Ltd., 2022 WL 2062914 (C.D. Cal. 2022)(lampshade); Day To Day Imports, Inc. v. FH Grp. Int'l, Inc., 2019 WL 2754996 (D.N.J. 2019)(car seat cover).

[11] 35 U.S.C. §171.

[12] Ethicon Endo-Surgery, Inc. v. Covidien, Inc., 796 F.3d 1312, 1315 (Fed. Cir. 2015) (performing infringement analysis, excluding functional aspects of the design from the comparison). Those wishing to protect the functional features may seek utility patent protection under the applicable standards.

[13] U.S. Patent & Trademark Office, Manual of Patent Examining Procedure § 1504.

things.[14] Although the 15-year term is shorter than the copyright term, design patents are not subject to fair use.[15] Further, these two regimes' conception and doctrinal lines have blurred to include overlapping subject matter.[16] Those engaged in the creation and protection of aesthetic goods must be familiar with both. But we also must be familiar with utility patents as well.

Design and utility patents have common historic roots. The utility patent was implemented first. Soon after, the design system was introduced under the assumption that it would track utility patent doctrine.[17] For example, both types of applications are subject to examination by the PTO. Significantly, design patents are subject to three of the same requirements as utility patents: novelty, disclosure, and nonobviousness.[18]

As a system intended to protect a product's visual aspects, design patents have a different appearance compared with utility patents. Typically, a modern design patent has very little text.[19] The agency "strongly discourage(s) any additional written disclosure."[20] As one example, below are some pages of an Apple design patent claiming a "head mounted display":[21]

[14] *Id.* at § 1504.01 ("a picture standing alone is not patentable under 35 U.S.C. 171. The factor which distinguishes statutory design subject matter from mere picture or ornamentation, *per se* [i.e., abstract design], is the embodiment of the design in an article of manufacture.").

[15] Andrew Beckerman-Rodau, *Design Patent Evolution*, 32 SCHT LJ 53, 90 (2015-2016) (recognizing that design pattens are not subject to fair use defense).

[16] Michael Risch, *Functionality and Graphical User Interface Design Patents*, 17 STAN. TECH. L. REV. 53, 90 (2013).

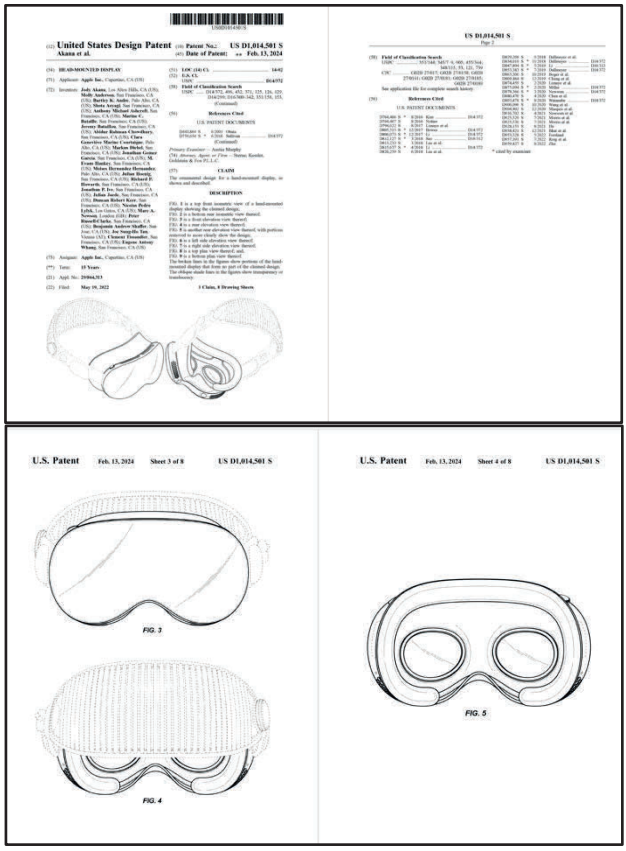
[17] U.S. PATENT OFFICE, REPORT FROM THE COMMISSIONER OF PATENTS 1, 2 (1841)(statement of then-Patent Commissioner Henry L. Ellsworth); *see also* Landers, *supra* note 3 at 197.

[18] 35 U.S. Code § 171(b); OddzOn Prod., Inc. v. Just Toys, Inc., 122 F.3d 1396, 1404-1405 (Fed. Cir. 1997) (novelty and nonobviousness); Titan Tire Corp. v. Case New Holland, Inc., 566 F.3d 1372, 1380 (Fed. Cir. 2009) ("Design patents are subject to the nonobviousness requirement of 35 U.S.C. § 103.").

[19] U.S. Patent & Trademark Office, Manual of Patent Examining Procedure, § 1503.01(a)(suggesting the claim language to read "The ornamental design for (the article which embodies the design or to which it is applied) as shown and described.").

[20] Jason Du Mont & Mark D. Janis, *Disclosing Designs,* 69 VAND. L. REV. 1631, 1633 (2016*).*

[21] U.S. Patent D101,4501S1 (filed May 19, 2022).



In addition to a description of the figures, prior art, and other necessary information about the ownership, classification, and inventorship of the design, the full specification includes nine drawings. The single claim reads, "[t]he ornamental design for a head-mounted display, as shown and described."[22] Thus, design patents tend to be quite brief, image-heavy, and provide little textual information that describes the inventor's aesthetic goals or how the claimed design achieves it. In contrast, utility patents typically contain several thousand words, and images (although not required).[23]

[22] *Id.*

[23] Peter Glaser & William Gvoth, *Changes in Patent Language to Ensure Eligibility Under Alice,* IP WATCHDOG (12/6/2017) (estimating that "the average patent application length increased to over 14,700 words") at https://ipwatchdog.com/2017/12/06/changes-patent-language-ensure-eligibility-alice/id=90721/.

II. UTILITY PATENT: OBVIOUSNESS STANDARD

To understand the *LKQ* court's decision, some discussion of the obviousness standard for utility patents is appropriate.[24] The Patent Act's section 103 sets the obviousness standard, instructing that a claim cannot be issued if the differences between it and the prior art would have been obvious to the hypothetical person having ordinary skill in the art.[25] The application of this statute begins with the familiar framework from the 1966 Supreme Court's decision *Graham v. John Deere*.[26] Under this, one considers the problem that the inventor was attempting to solve. Next, one determines the scope and content of the relevant prior art.

All prior art references must be analogous to the claim at issue.[27] The analogousness requirement derives from the law's recognition that the hypothetical person of ordinary skill cannot know all knowledge across all fields.[28] Rather, the person of ordinary skill is charged with knowing: 1) all references in the same field of endeavor as the claim and 2) those reasonably pertinent to the problem the inventor was seeking to solve.[29] For example, if the claim describes a combination of a novel toothbrush that adds a floss dispenser in the handle, prior art that has nothing to do with the claim (for example, a truck powered with electricity) cannot be considered in the obviousness analysis. However, a reference that describes a toothpick stored in a toothbrush handle is analogous because it is in the same field of endeavor (here, personal dental hygiene).

Once the prior art is identified, *Graham* requires that one articulate the differences between the prior art and the claim at issue. For example, assume that the prior art discloses a standard toothbrush. Here, the difference between the prior art and the claim is the addition of the floss dispenser. Next, the hypothetical person of ordinary skill in the relevant art is defined. One possibility is a college-educated creator of hygiene products for consumers, including toothbrushes. Then, any evidence of secondary considerations is weighed, including such evidence as commercial success, long-felt but unsolved needs, and the failure of others to create the invention. By way of illustration, if the patentee's sales of the toothbrush/floss dispenser are unusually successful because consumers want the convenience of this combination, this evidence suggests that the claim is nonobvious.

As a final step, a determination of whether the claim is obvious (or not) is made. Particularly where there are multiple references, there is consideration of whether the person of ordinary skill would have had a reason to combine them to

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[24] *See* Section IV (design patent obviousness analysis uses a similar framework to utility patent obviousness analysis).
[25] 35 U.S.C. §103. The relevant time period for this analysis depends on which version of the Patent Act applies. For applications with an effective filing date prior to March 16, 2013, it is the date of the claim's invention.
[26] Graham v. John Deere Co., 383 U.S. 1, 17–18 (1966).
[27] Airbus S.A.S. v. Firepass Corp., 941 F.3d 1374, 1382 (Fed. Cir. 2019).
[28] *Id.*
[29] *Oetiker,* 977 F.2d at 1447.

reach the same result described in the claim at issue.[30] In the end, the factfinder must determine whether the hypothetical person of ordinary skill in the art is able to reproduce the invention based on their skill and the prior art. If so, the claim is obvious and not valid.

In the 2007 *KSR Int'l Co. v. Teleflex Inc.* (*KSR*), the Supreme Court reaffirmed *Graham's* obviousness framework in the utility patent context.[31] The *KSR* decision added layers to the *Graham* analysis, emphasizing that the decision- maker must use an "expansive and flexible approach."[32] As the *KSR* Court discussed, assessing obviousness may involve looking at multiple, interrelated pieces of prior art, as well as the knowledge of those of ordinary skill, to determine whether a claim is nonobvious (or, alternatively, is a merely predictable solution and therefore invalid). The Court stated:

> 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 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. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.[33]

The *KSR* Court advised that "[g]ranting patent protection to advances that would occur in the ordinary course without real innovation retards progress and may, for patents combining previously known elements, deprive prior inventions of their value or utility."[34] Generally, the decision rejects using rigid rules and restrictions when applying the nonobviousness standard. Further, *KSR* allowed courts to invalidate claims that represent merely predictable variations of preexisting knowledge.

III. FORMER DESIGN PATENT OBVIOUSNESS STANDARD

The version of the nonobviousness requirement formerly applied to design patents used a modified version of the *Graham* factors that "ma[de] obviousness extremely difficult to prove."[35] This was a now-defunct two-step framework known as the *Rosen-Durling* test.[36] This standard was based on cases decided long before *KSR*.

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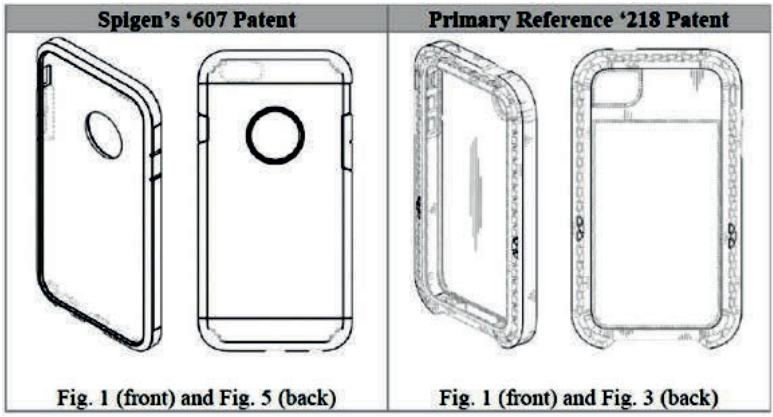
[30] DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co., 464 F.3d 1356, 1361 (Fed. Cir. 2006).
[31] KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398 (2007).
[32] *Id.* at 415.
[33] *Id.* at 421.
[34] *Id.* at 402.
[35] Mark Bartholomew, *Nonobvious Design,* 108 IOWA L. REV. 601, 609 (2023); *see also* Campbell Soup Co. v. Gamon Plus, Inc., 10 F.4th 1268, 1275 (Fed. Cir. 2021) ("we address the first three *Graham* factors by determining whether a designer of ordinary skill would have combined teachings of the prior art to create 'the same overall visual appearance as the claimed design.'").
[36] In re Rosen, 673 F.2d 388 (CCPA 1982); Durling v. Spectrum Furniture Co., Inc., 101 F.3d 100 (Fed. Cir. 1996).

In 2024, the Federal Circuit issued an en banc decision *LKQ Corporation v. G.M. Global Technology Operations L.L.C.* (*LKQ*), to consider the continued viability of the *Rosen-Durling* test for design patents in a post-*KSR* environment.[37] This inquiry was overdue, given the history of the design system contemplated that parallel standards should apply to both. Essentially, the *LKQ* decision brings the design patent obviousness standard far closer to that used in the utility patent system. Consequently, today a valid design patent is likely to be more difficult to obtain.

Under the first *Rosen-Durling* prong, the factfinder must identify a primary reference—that is, a single prior art reference that has the "design characteristics of which are basically the same as the claimed design."[38] To do so, the proponent needed to demonstrate no substantial difference between the asserted reference in its overall visual appearance from the design patent's claim.[39] Step one's "basically the same" requirement was a high bar to the admission of a primary reference, higher than the analogous art requirement for utility patents. For example, in *Spigen Korea Co. v. Ultraproof, Inc.,* the Federal Circuit considered whether a prior art reference could support summary judgment of the obviousness of a design patent for a cell phone case.[40]



On the left is a representative illustration from the design patent in suit (the '607 patent). A design patent image is asserted as a primary reference (the '218 patent) on the right. In *Spigen*, the Federal Circuit found that the '218 patent was not "basically the same" as the '607 patent and, therefore, could not serve as a primary reference under the *Rosen-Durling* standard. Specifically, the court found that the '218 design patent would have required significant modifications—for example, adding an outer shell, the large circular aperture on the back, and shrinking the chamfered edge, among other things, to match the '607 patent.

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[37] LKQ Corporation v. GM Global Technology Operations LLC, 102 F.4th 1280 (2024)(en banc).
[38] *Rosen*, 673 F.2d at 391.
[39] Spigen Korea Co. v. Ultraproof, Inc., 955 F.3d 1379, 1383 (Fed. Cir. 2020).
[40] *Id.* at 1384–85.

Interestingly, as a work in the same field of endeavor as the design patent at issue (cell phone cases), the '218 design patent reference would have easily met the analogous art prerequisite for a utility patent challenge. Yet, in this case, the court held that summary judgment of obviousness was not appropriate as the asserted reference failed the primary reference test.

Furthermore, under the former standard, if no primary reference could be found, then the inquiry stopped and the design patent could not be found invalid as obvious.[41] According to one scholar, the primary reference requirement, among other things, meant that the "Federal Circuit has turned nonobviousness into a dead letter" for design patents.[42] Moreover, at *Rosen-Durling* step two, additional prior art can only be used if it is "so related to the primary reference that the appearance of certain ornamental features in one would suggest the application of those features to the other."[43] This presented an additional stumbling block to invalidating a design patent.

IV. LKQ: MODIFYING THE DESIGN PATENT OBVIOUSNESS STANDARD

In 2024, the Federal Circuit issued its en banc *LKQ* decision, which considered the continued viability of the *Rosen-Durling* test in a post-*KSR* environment.[44] The primary focus of this decision was the first *Graham* inquiry—specifically, the scope and content of the prior art.

The *LKQ* court overruled the *Rosen-Durling* requirement for a primary reference that must be "basically the same" as the challenged design claim. This decision found this restriction was too rigid in light of *KSR's* direction that nonobviousness requires an expansive and flexible approach. Instead, the *LKQ* court imposed a modified analogous art requirement for the primary reference. A work in the same field of endeavor as the claim meets the primary reference standard.[45] The court further observed that "[t]he primary reference will likely be the closest prior art, i.e., the prior art design that is most visually similar to the claimed design."[46]

The opinion warned that a reference might not be analogous even if it was "reasonably pertinent to the problem that the inventor sought to solve." The court reasoned that this is because design patent specifications consist primarily of images and therefore rarely articulate any problem to be solved at all. Despite this, the court left a door open for other references subject to a case-by-case inquiry.[47] Evoking *KSR's* direction that the inquiry be flexible, the court explained that a

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[41] *Durling,* 101 F.3d at 105 ("Without such a primary reference, it is improper to invalidate a design patent on grounds of obviousness.").
[42] Bartholomew, *supra* note 35, at 609.
[43] In re Borden, 90 F.3d 1570, 1575 (Fed. Cir. 1996).
[44] LKQ Corp. v. GM Global Technology Operations LLC, 102 F.4th 1280 (2024).
[45] *Id.* at 1297 (stating that "analogous art for a design patent includes art from the same field of endeavor as the article of manufacture of the claimed design.").
[46] *Id.* at 1298.
[47] *Id.* at 1297 (explaining "we do not delineate the full and precise contours of the analogous art test for design patents").

party's failure to present a primary reference would no longer prevent an obviousness challenge from proceeding.[48]

In addition, the court removed the requirement that any secondary prior art be "so related" to the primary reference before it can support an obviousness challenge. Instead, design patent challenges must rely on *KSR's* requirement for a reason to combine multiple sources. As the *LKQ* opinion described, "there must be some record-supported reason… that an ordinary designer in the field of the article of manufacture would have modified the primary reference with the feature(s) from the secondary reference(s) to create the same overall appearance as the claimed design."[49] A reason to combine may derive from, for example, the experience and creative abilities of a designer with ordinary skill, market needs and industry customs, and the prevalence of the relevant aesthetic features within the relevant sector.

For the application of the second *Graham* factor, the *LKQ* court reaffirmed that determining the difference between the claimed design and the prior art requires a visual comparison of the appearance of both. For *Graham's* third factor, the court underscored that the relevant perspective for this analysis is a designer of the relevant category of articles. Design patents also require consideration of any evidence of the secondary considerations.[50]

Finally, the *LKQ* court described the application of the fourth *Graham* factor, the evaluation of the obviousness of the claimed design. According to the knowledge of the ordinarily skilled designer, this inquiry considers whether the hypothetical designer would have modified the prior art to recreate the claimed design. If not, the factfinder can consider other analogous art to determine whether the ordinary design would have used it to modify the primary reference to achieve the overall effect of the claim.

Generally, *LKQ* represents a necessary step toward making protection for design more meaningful. By subjecting designs to consequential evaluation, the nonobviousness requirement can serve its constitutional purpose. Some of its future implications are explored below.

V. THE IMPLICATIONS OF LKQ

The Federal Circuit's ruling fits with the design statute's history. The system was initially proposed to "operate under the same limitations and on the same conditions" as those that apply to utility patents.[51] By lowering the threshold for

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[48] *Id.* at 1294 (stating "*Rosen's* rigid requirement limiting a primary reference to designs that are 'basically the same' as the claimed design—and abruptly ending the analysis in the absence of such a reference—imposes limitations absent from § 103's broad and flexible standard.").

[49] *Id.* at 1299.

[50] LKQ Corp. v. GM Global Technology Operations LLC, 102 F.4th 1280, 1300 (2024)("We do not disturb our existing precedent regarding the application of secondary consid erations such as commercial success, industry praise, and copying to the obviousness analysis in design patents. It is unclear whether certain other factors such as long felt but unsolved needs and failure of others apply in the design patent context.").

[51] Ellsworth, *supra* note 17 at 2.

prior art, *LKQ* renders design patents more challenging to obtain and uphold. This direction supports the policy that is operationalized by the obviousness standard, which is intended to provide protection only for the most significant aesthetic advances.[52] Before *LKQ*, it had been almost universally observed that the validity requirements for design patents had been very lax.[53] As some scholars have concluded, "[t]he truth is that design patent law's doctrinal screen is largely toothless."[54] The *LKQ* puts the design system on a more solid foundation.

Given this, it is plausible that the court will tighten other design patent standards to more closely match those for utility patents. For example, the court might import the disclosure requirements that are currently articulated in recent Supreme Court and/or Federal Circuit en banc decisions for utility patents.[55] Indeed, requiring more robust disclosure in design patents is both an implementable and advisable requirement. Visual depictions and a rich textual disclosure can co-exist in design patent applications. Indeed, when design patents were first issued during the 1800's, it was not unusual for applicants to include both descriptive text and drawings.[56]

Today, the drawings in many design applications lack rich informational detail that would render examination and claim construction more meaningful. There is nothing about these drawings that resist textual disclosure. As a practical matter, design patent claims are routinely translated into text in many contexts, including verbal descriptions of inventions in litigation briefs, *Markman* claim construction orders, and as part of in-court arguments.[57] Indeed, the Federal Circuit had formerly *required* that courts translate the visual claims into words to determine whether a primary reference met the "basically the same" standard.[58]

Requiring a more robust design disclosure (including text) is valuable for many of the same reasons that it is beneficial for utility patents. Requiring meaningful disclosure facilitates a more complete representation of the designer's

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[52] Graham v. John Deere Co., 383 U.S. 1, 9, 86 S. Ct. 684, 689 (1966) (stating that patents were never intended to granted for "small details, obvious improvements, or frivolous devices").

[53] Sarah Burstein, *Is Design Patent Examination Too Lax?,* 33 BERKELEY TECH. L.J. 607, 611 (2018).

[54] Christopher Buccafusco, Mark A. Lemley & Jonathan S. Masur, *Intelligent Design,* 68 DUKE L.J. 75, 113 (2018).

[55] *See e.g.*, Amgen Inc. v. Sanofi, 598 U.S. 594, 143 S.Ct. 1243 (2023) (enablement); Nautilus Inc. v. Biosig Instruments, Inc. 134 S. Ct. 2120 (2014) (definiteness); and Ariad Pharmaceuticals, Inc. v. Eli Lilly and Co., 598 F.3d 1336 (Fed. Cir. 2010) (en banc) (written description).

[56] *Id.* at 1637 (observing that early design applications contained "extensive verbal disclosures to accompany the drawings"); Landers, *supra* note 3 at 199. The PTO began to discourage the use of text in applications during the late nineteenth century. U.S. Patent Office, 1 Official Gazette 153 (Jan. 3, 1893).

[57] Jeanne C. Fromer and Mark P. McKenna, *Claiming Design,* 167 U. OF PENN. L. REV. 123, 139 (2018).

[58] Durling v. Spectrum Furniture Co., 101 F.3d 100, 103 (Fed. Cir. 1996), overruled by LKQ Corp. v. GM Glob. Tech. Operations LLC, 102 F.4th 1280 (Fed. Cir. 2024)("Given the lack of a visual language, the trial court must first translate these visual descriptions into words—*i.e.,* into a common medium of communication").

work, provides a richer understanding for the agency, and better informs third parties of the scope of the claimed design.[59] Moreover, just as specialized journals educate the field regarding the design philosophy, processes, and new directions, a more substantial design patent disclosure requirement can better advance aesthetic knowledge to empower others to learn and create.

Further, additional disclosure would permit designers to describe the aesthetic problem that they sought to solve. As the *LKQ* court observed, including this information allows a broader range of analogous art to be admitted.[60] The work to separate those designs that are worthy of patent protection, and those that are not, can be undertaken by the nonobviousness inquiry in the design and utility context. The *LKQ* permits the use of many of the same concepts discussed in the utility patent obviousness analysis to apply to designs.

VI. INVENTORSHIP FOR AI-ASSISTED CLAIMS

The intellectual property system has held that protection will extend only to works created by humans.[61] In essence, legal protection is intended to reward *human* creativity. This excludes AI-generated works. However, there are significant questions that relate to the protection of works that have been created using AI as an aid. For example, a pharmaceutical researcher may use AI to develop versions of molecules to ideate possible combinations that can be tested for efficacy.[62] Similarly, a musician may use AI to fine-tune their music or to test a new version of their composition.[63] A photographer may use AI-assisted image correction to speed through edits.[64] The line between using AI as a substitute for human creativity and its uses to assist has been challenging to draw. For works

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[59] Landers, *supra* note 3 at 249-250; *but see* Jason Du Mont & Mark D. Janis, *Disclosing Designs,* 69 VAND. L. REV. 1631, 1635 (2016) (importing utility rules into design disclosure "is not merely an exercise in borrowing rules ad hoc from utility patent law, because the vast jurisprudence developed there for adequacy of disclosure is deeply infused with linguistic inquiries that take for granted that the technical disclosure will be rendered predominantly in writing"); *see generally* Timothy R. Holbrook, *Possession In Patent Law*, 59 SMU L. REV. 123 (2006) (describing the benefits of disclosure in utility patents).

[60] *LKQ,* 102 F.4th at 1299 (expressing concern that the problem to be solved "may have less relevance in the design patent context than in the utility patent context" because of the lack of written disclosure).

[61] Thaler v. Vidal, 43 F.4th 1207 (Fed. Cir. 2022) (patent applications must be based on a human inventor's work); Thaler v. Perlmutter, 687 F. Supp. 3d 140 (D.D.C. 2023) (same for copyright); U.S. Copyright Office, Cancellation Decision re: Zarya of the Dawn (VAu001480196) at 2 (Feb. 21, 2023) (portions of work created by AI generation tool Midjourney are not subject to copyright protection) at https://www.copyright.gov/docs/zarya-of-the-dawn.pdf.

[62] Maciej Staszak et al., *Machine Learning in Drug Design: Use of Artificial Intelligence to Explore the Chemical Structure–Biological Activity Relationships,* 12.2 COMP. MOL. SCI. 1, 10 (2022).

[63] Rolling Stone Culture Council, *Unveiling the Impacts and Disruption of AI on Music Industry Stakeholders,* Rolling Stone.

[64] Brian Chen, *How to Use A.I. to Edit and Generate Stunning Photos,* The New York Times (June 2, 2023).

that fall within both copyright and patent law, such as software, familiarity with both standards is necessary.

As of this writing, both the Copyright and Patent & Trademark Offices have promulgated policy statements to address such questions.[65] Both must be cautiously approached, given these are preliminary documents that can change and have not yet been evaluated by the courts. Despite this, they provide significant assistance. Both appear to be well-reasoned approaches based on established precedents. It would be unsurprising if these frameworks became widely adopted. The starting point for both is that fully AI-generated work is excluded from protection. For those that include a mix of AI-generated and human creativity, decisions about protection are made on a case-by-case basis. From there, the analysis differs in sufficiently significant ways that warrant a detailed look at both.

A. Copyright Office Guidance

The Copyright Office allows registration of works that include content generated by AI, so long as the human author contributed their "own original mental conception, to which the author gave visible form."[66] This standard recalls *Burrow-Giles v. Sarony*, in which the Court determined that a photograph was a human-created work and not a machine-made reproduction of the scene captured by the lens.[67] In that case, the Court reasoned that the photographer had contributed "his own original mental conception" in selecting, arranging, and posing the subject, and therefore, the photograph was human-made.[68] Similarly, the Copyright Office standard looks to the "extent to which the human had creative control over the work's expression and 'actually formed' the traditional elements of authorship."[69] This guidance emphasizes the phrase traditional elements of authorship as a key determinant. It defines that phrase as the creation of some literary, artistic, or musical expression or elements of selection, arrangement, or the like.[70]

The Copyright Office's guidance explains that merely providing a prompt to a generative AI system will not typically meet this standard. As it explains, one who merely instructs an AI engine to draft a poem is akin to providing general instructions to a commissioned artist. In other words, "[w]hen AI technology determines the expressive elements of its output, the generated material is not the product of human authorship" and cannot be protected.[71] However, creators who

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[65] Patent Office Guidance; Library of Congress, Copyright Registration Guidance: Works Containing Material Generated, 88 Fed. Reg. 16190 (3/16/23) (Copyright AI Standard).
[66] *Id.* at 16192.
[67] There, the court rejected the argument that "a photograph is the mere mechanical reproduction of the physical features or outlines of some object, animate or inanimate, and involves no originality of thought or any novelty in the intellectual operation connected with its visible reproduction in shape of a picture." Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53, 59, 4 S. Ct. 279, 281 (1884).
[68] *Id.* at 60.
[69] Copyright AI Standard, *supra* note 65 at 16193.
[70] *Id.* at 16193.
[71] *Id.* at 16192.

retain artistic control over the result and engage in traditional elements of authorship can use AI tools to reimagine, modify, or reinterpret their human expression and obtain protection.

Where a work contains a mix of human and computer-generated expression, protection will extend only to the human-created portion. Therefore, the Copyright Office requires that "AI-generated content that is more than de minimis should be explicitly excluded from the application"[72] in the relevant section of the application form. In addition, the human-created content must be specifically delineated on the application as excluded from protection.[73]

VII. PATENT INVENTORSHIP GUIDANCE

As with the copyright guidance, the PTO advises that a claim entirely conceived by AI is not patentable, and AI cannot be named as a co-inventor. These guidelines accept that AI can be an ingredient to advance technical solutions. The Patent Inventorship Guidance applies to utility, design, and plant patents.[74]

Generally, in patent law, the definition of "invention" is contextual. Among two separate inventors, the one who succeeds has established the first conception and reduction to practice.[75] Conception is the "formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is after that to be applied in practice."[76] Accomplishing all of the mental work of an invention amounts to conception. To achieve this, the inventor must hold in their mind a complete implementation that is later reflected in the claim. Finally, the inventor must recognize and appreciate the conception—that is, the components that comprise the claimed elements of the invention.[77] If there is more than one inventor, recognition and appreciation by a single inventor is sufficient.[78] In contrast, reduction to practice requires either (1) the inventor to construct an embodiment or perform each step of a process claim such that the operational utility of the invention is confirmed or (2) the filing of a patent application that meets the patent law's disclosure requirements.[79]

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[72] *Id.*

[73] *Id.* at 16192 (for the protection of the human-created portions of a work, the application must "identify the author(s) and provide a brief statement in the 'Author Created' field that describes the authorship that was contributed by a human.").

[74] Dept. of Commerce, U.S. Patent & Trademark Office, Inventorship Guidance for AI-Assisted Inventions 89 Fed. Reg. 10043, 10049 (2/13/24) (Patent Inventorship Guidance).

[75] Cooper v. Goldfarb, 154 F.3d 1321, 1327 (Fed. Cir. 1998) (describing the standard).

[76] Invitrogen Corp. v. Clontech Lab, Inc., 429 F.3d 1052, 1063 (Fed. Cir. 2005).

[77] MANUAL OF PATENT EXAMINING PROCEDURE § 2138.04; Dow Chem. Co. v. Astro-Valcour, Inc., 267 F.3d 1334, 1341 (Fed. Cir. 2001) (describing and applying the standard). The exception to this rule is the doctrine of simultaneous conception and reduction to practice, which is seen most frequently in nascent and/or uncertain arts. See, e.g., Amgen, Inc. v Chugai Pharm. Co., 927 F.2d 1200, 1206 (Fed. Cir. 1991).

[78] Patent Inventorship Guidance, *supra* note 74 at 10047.

[79] Eaton v. Evans, 204 F.3d 1094, 1097 (Fed. Cir. 2000) (describing actual reduction to practice); Goeddel v. Sugano, 617 F.3d 1350, 1353 (Fed. Cir. 2010) (same for constructive reduction to practice).

Another definition of inventorship relates to whether one can be named as an inventor on a patent. As a starting point, a human inventor who fully conceives of the invention is listed as the sole inventor on the application. For claims made with the assistance of AI, the examiner must determine whether the human's contribution is sufficiently substantial under the *Pannu v. Iolab* test.[80] This test requires that a human must (1) contribute in some significant manner to the conception of the invention, (2) contribute to the claimed invention that is not insignificant in quality, when that contribution is measured against the dimension of the complete invention, and (3) do more than merely add well-known concepts and/or the current state of the art.[81] If the human's contribution is not sufficiently substantial under *Pannu*, the claim must be rejected because a claim substantially created by AI is not patentable.

According to the Patent Inventorship Guidance, a human cannot be named an inventor by merely inputting a research plan or question into an AI system and asking it to create a solution. One of the agency's examples illustrates this point.[82] There, two hypothetical inventors recognize the need for a new transaxle for a remote-control toy car and ask an AI system to design one. The system does so, and the two individuals examine the results and recognize it as a workable solution. At that point, the agency's example concludes that the human contribution constitutes the general identification of a problem that was not an inventive solution. Under those circumstances, neither individual could claim to be an inventor. Indeed, even if one selects a standard material (such as steel) to build transaxles, it is not sufficient to save the claim as such a contribution is not sufficiently inventive. However, an inventor who makes significant changes to the AI system's schematics by modifying the design and adding mechanical revisions that are incorporated into the claim will be considered an inventor and allow the claim to issue.

Similarly, the Patent Inventorship Guidelines suggest that one who owns and maintains an AI system has not contributed enough to assert inventorship over the results. However, the agency states, "[i]n some situations, the natural person(s) who designs, builds, or trains an AI system given a specific problem to elicit a particular solution could be an inventor, where the designing, building, or training of the AI system is a significant contribution to the invention created with the AI system."[83] The agency's recognizes that a case-by-case determination will help draw the line in difficult cases.

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[80] Pannu v. Iolab, 155 F.3d 1344, 1341 (Fed. Cir. 1998). Generally, individuals can establish their status as a co-inventor if they apply for a patent jointly, even though (1) they did not physically work together or at the same time, (2) each did not make the same type or amount of contribution, or (3) each did not make a contribution to the subject matter of every claim of the patent. 35 U.S.C. § 116(a).

[81] In this context, a human's contribution to reduction to practice does not count except in rare cases.

[82] U.S. Patent & Trademark Office, Inventorship Guidance: Transaxle for Remote Control Car (undated) at https://www.uspto.gov/sites/default/files/documents/ai-inventorship-guidance-mechanical.pdf.

[83] Patent Inventorship Guidance, *supra* note 74 at 10049.

Unlike the Copyright Office, the PTO's Guidance does not require blanket disclosure of AI use. Rather, the agency advises that inventors' applicants should "rarely need to submit information regarding inventorship" unless the facts implicate the duty of disclosure under 37 C.F.R. 1.56.[84] Recognizing that inventorship may implicate validity under certain circumstances, the Patent Inventorship Guidance further emphasizes that attorneys have a duty of reasonable inquiry into inventorship and to name appropriate inventors.

VIII. AI AND PATENTABLE SUBJECT MATTER

Utility patents must satisfy the statutory subject matter requirement. Under 35 U.S.C. section 101, Congress defined the scope of patentable subject matter as any "process, machine, manufacture, or composition of matter" or any improvement of any one of these. There are significant judicially created exceptions. The most important of areas of overlap within the copyright sphere involves software, which implicates patent law's abstract idea exception.

As background, utility patents are granted for solutions. Granting patent claims to abstract ideas would "disproportionately tie up the use of the underlying" ideas and "are therefore ineligible for patent protection."[85] In contrast, granting patents for the *application* of ideas "pose no comparable risk of pre-emption," and "therefore remain eligible for the monopoly granted under our patent laws."[86] As one example, software that uses a specific method to improve the functioning of a computer is typically held to meet the patentable subject matter standard. However, an algorithm that might be used in many circumstances is considered abstract subject matter. In recent years, questions have been raised as to how the patentable subject matter doctrine applies to software created with the assistance of AI.

On July 17, 2024, the PTO issued Guidance on Patent Subject Matter Eligibility, Including on Artificial Intelligence (PSM Guidance).[87] Unlike the Patent Inventorship Guidance, the PSM Guidance does not inquire into the origin of any claim to determine whether the requirements of section 101 have been met.[88] Therefore, "AI-assisted inventions are not categorically unpatentable."[89] The PSM Guidance merely applies existing patentable subject matter law to claims made with the assistance of AI. For example, a purely mathematical concept is ineligible whether it was created by a human or by AI.

The PSM Guidance cited *XY, LLC v. Trans Ova Genetics,*[90] which held that the mathematical sorting of particles was not an abstract mathematical concept. The fact that the system used math to achieve its solution was no bar to patentability. As the court explained, the claims were directed to an "improved

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[84] *Id.* at 10049.
[85] Alice Corp. Pty. Ltd. v. CLS Bank Int'l, 573 U.S. 208, 217 (2014).
[86] *Id.*
[87] U.S. Patent & Trademark Office, *2024 Guidance Update on Patent Subject Matter Eligibility, Including on Artificial Intelligence,* 89 FED. REG. 58128 (July 17, 2024).
[88] *Id.* at 58138.
[89] *Id.*
[90] XY, LLC v. Trans Ova Genetics, 968 F.3d 1323, 1331 (Fed. Cir. 2020).

method of operating a flow cytometry apparatus to sort individual particles in the same sample in real time and includes a detailed recitation of the means for doing so."[91] The PTO's citation to this case in its PSM Guidance suggests that these results would be patentable if the mathematical portion of the method was accomplished by AI, or not.

Another exception to patentable subject matter includes certain methods of organizing human activity. These refer to the inability to patent fundamental economic principles or practices, commercial or legal interactions, and managing personal behavior or relationships or interactions between people.[92] In other words, one cannot claim the creation of a virtual contract as that would constitute a legal interaction. The PSM Guidance embellished these categories by stating that the following types of claims are ineligible as well:

- Collecting and recording information on a user's movements and location history;
- Monitoring and notifying customers of the pickup or delivery of purchases; and
- Various activities relating to detecting fraud in financial transactions.

The PTO appeared to include these examples to highlight that such claims will not be granted, whether or not such claims rely on AI for their implementation.

Additionally, the PSM Guidance considered how the abstract ideas exception applies to claims to mental steps in the AI context. Generally, a claim to a process that can be performed in the human mind, or by a human using a pen and paper (or for example a slide rule), is not subject matter that is protected by patent law.[93] This is because patent law is thought to act as an incentive for "the search for a technological solution to a technological problem."[94] For example, an algorithm that calculates sums is not patentable because one could accomplish this task either in one's mind.

The PSM Guidance points out that "claims do not recite a mental process when they contain limitations that cannot practically be performed in the human mind, for instance when the human mind is not equipped to perform the claim limitations."[95] Although the PSM Guidance suggests that it is not intended to broaden the current mental steps doctrine beyond its current scope, this suggests that AI patentability might be appropriate for claims that are sufficiently complex such that a human may be unable to accomplish them. As this reading of the PSM Guidance is untested, however, such claims should be drafted carefully and with an expectation that this is an area of uncertainty.

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[91] *Id.* at 1331.
[92] PSM Guidance, at 58135.
[93] CyberSource Corp. v. Retail Decisions, Inc., 654 F.3d 1366, 1369 (Fed. Cir. 2011).
[94] U.S. Patent & Trademark Office, Manual of Patent Examining Procedure § 2106.05(a).
[95] PSM Guidance, at 58136; *see also* U.S. Patent & Trademark Office, Manual of Patent Examining Procedure § 2106.04(a)(2); *see also* SRI Int'l, Inc. v. Cisco Systems, Inc., 930 F.3d 1295, 1304 (Fed. Cir. 2019) (humans are not capable of monitoring network packets).

The PSM Guidelines may not assist in determining which aspects of software should be protected under copyright versus patent law.[96] However, these guidelines do assist in drafting and advising those seeking to protect software functionality within the patent system. Overall, it is evident that the PTO has attempted to integrate existing patentable subject matter law with AI as a new technological advance.

IX. INVENTORSHIP ASSIGNMENT RULES

New York has joined several other states that limit the scope of assignment agreements for patentable inventions.[97] To the extent that employer invention assignment agreements direct the transfer of ownership of all inventions created by the employee, such terms are no longer valid under this statute. This is true for any invention "developed entirely on his or her own time without using the employer's equipment, supplies, facilities, or trade secret information." Existing agreements that purport to do so are unenforceable.

The statute allows the assignment of an employee-created invention if it is related to the employer's business, anticipated research or development of the employer, or resulted from any of the employee's work. New York's law was immediately effective on September 15, 2023, when its Governor signed it. Generally, these states bring patent assignment closer to Copyright's work-for-hire doctrine.

CONCLUSION

The patent system has responded to circumstances to preserve the system's health. The *LKQ* court's decision harkens back to the design system's original intent and corrects the system's previously lax standards. Time will tell whether more rigorous validity standards will be imposed for other design patent requirements. In addition, the PTO has filled a vacuum on the inventorship credit for AI-assisted inventions, as well as providing guidance for patentable subject matter. Finally, New York has followed the trend established in other states to preserve competition. In doing so, the most recent law prevents blanket assignment of all employee-created doctrines. In result, this echoes the copyright work-for-hire standard. As each of these areas are nascent, copyright practitioners are encouraged to keep up with developments as they occur.

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[96] Oracle Am., Inc. v. Google Inc., 750 F.3d 1339, 1347 (Fed. Cir. 2014); *See* Pamela Samuelson, *Staking the Boundaries of Software Copyrights in the Shadow of Patents,* 71 FLA. L. REV. 243 (2019).

[97] N.Y. Lab. Law § 203-f (2023). Other states with similar laws are California (CA Labor Code § 2870), Delaware (Del. Code tit. 19 § 805), Illinois (765 ILCS 1060/2), Kansas (2006 Kansas Code - 44-130), Minnesota (Minn. Stat. § 181.78), Nevada (NV Rev. Stat. § 600.500 (2022)), New Jersey (NJ Rev. Stat. § 34:1B-265 (2022)), North Carolina (NC Gen Stat § 66-57.1 (2022)), and Utah (Utah Code Section 34-39-3), Wash. Rev. Code § 49.44.140.