



BRIEFS

An Innovation Forecast: What the Three Most Cited Patents Since 2020 Have to Say



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Every patent tells a story of innovation, and part of that story is written in its “References Cited” section. Found on the front page of a patent, this section lists the prior patents and publications that either the applicant or the examiner has identified as relevant to the invention (and thus, its patentability). These citations create a roadmap of related technologies and prior art.

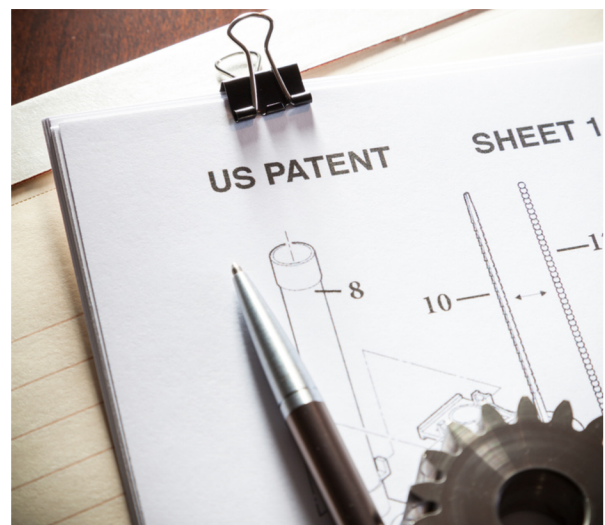
In the world of patents, “cites” refers to the number of prior patents and publications that a patent references. Think of it as the foundation that the invention is built upon. Conversely, “cited by” reveals how many later patents reference this patent in their own citations.

Because these citations can be tracked, they can offer a unique lens into emerging technological trends. If a patent is cited by many subsequent filings, it signals that many inventors are seeking to protect a similar technology. For example, if the person who invented the television applied for a patent, technologies that further develop this television invention would likely need to cite this initial patent to receive a valid patent of their own.

This includes TV that is in color (not just black and white), TV that includes a flat screen instead of weighing the same as an anvil, and variations of televisions (LED TV, plasma TV, Smart TV), etc.

Thus, “cited by” data can highlight emergent technologies that reveal where inventors are focusing their efforts to protect new ideas. The “cited by” count can even hint at which technologies are poised to shape the future. As such, this article will highlight the top three “cited by” patents that have been applied for since 2020 to highlight the most sought-after contemporary cutting-edge technologies.

Further, note that while these “cited by” numbers can be inflated by a corporation citing its own patent repeatedly in a patent “family,” the patents that shine through to the top as the most “cited by” patents still give a good indication of revolutionary technologies that many different competitors and inventors cite to seek protection for their piece of the brand-new pie.



#3

At 463 “cited by” citations, we have inventor Charles Howard Cella’s U.S. Pat. No. 11,620,702, “SYSTEMS AND METHODS FOR CROWDSOURCING INFORMATION ON A GUARANTOR FOR A LOAN,” from the owner “Strong Force TX Portfolio 2018 LLC” filed May 28, 2020, and issued April 4, 2023.

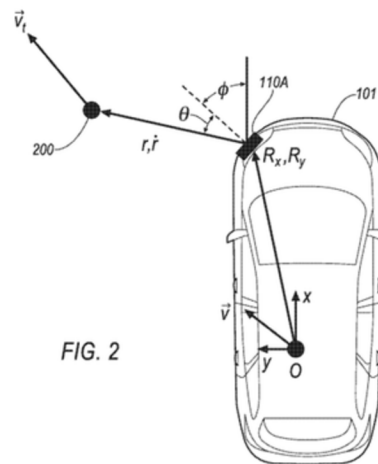
With 277 pages and 110 figures, this patent includes many of the tech hot topics that have been in the spotlight in recent years: crowdsourcing, blockchain, and artificial intelligence (AI). Giving a proper summary of the disclosure of this patent is beyond the scope of this Brief, but there are a few key takeaways that can be made by looking at this patent.

It’s a lot to take in, but there is no question about it: our world is at an ever-accelerating rate becoming an electronic world. With the crowdsourcing disclosed by this patent, this shows our society’s increasing reliance on distributed networks to solve problems, gather information, and make decisions. This patent is directed to seeking guarantors for a loan, but the technology itself can still be applied in many different areas. With the blockchain disclosed by this patent, this shows an escalating trend of ensuring data integrity and transparency over an electronic medium.

With the artificial intelligence disclosed, if anything, this is an example of how AI is being integrated into making large-scale operations more feasible, not only efficiency-wise but also with respect to adaptability and interoperability between technologies and platforms. What a great example of a foundational patent establishing emerging technologies that so many inventors and companies are at this very moment seeking to get protection for.

#2

In the number two spot with 467 citations, we have inventors Marcos Paul Gerardo Castro, Jinhyoung Oh, and Jinesh Jain’s U.S. Pat. No. 11,586,862, “ENHANCED OBJECT DETECTION WITH CLUSTERING,” from the



owner Ford Global Technologies, LLC, filed February 14, 2020, and issued February 21, 2023.

As opposed to the previously highlighted patent, this patent comes from multiple inventors at the staple name of Ford and is only 14 pages long with four figures. Unsurprisingly, this patent deals with automobiles, but more particularly, it deals with autonomous vehicles.

This patent highlights a core technology necessary to enable self-driving vehicles—the ability to predict and respond to what is happening around the vehicle. Given how many citations this patent has received by other patents in the nearly five years since its application date (Valentine’s Day 2020, to be exact), I’d put money on there being a heavy push for self-driving vehicles in the near future.

#1

Our top patent with 468 “cited by” citations is Qiu Jin Guo, Jun Xu, and Jin Xu’s U.S. Pat. No. 11,638,251, “METHODS, APPARATUS AND SYSTEMS FOR DETERMINING A TRANSPORT BLOCK SIZE IN A WIRELESS COMMUNICATION,” from owner ZTE Corporation, filed December 28, 2020, and issued April 25, 2023.

At the center of this age of connectivity, it seems fitting that the most cited patent that has been applied for since 2020 deals with a wireless communication system—the 5G NR network. While this patent is not

the one that “invented” 5G (there is not really “one” patent that did, but it really started picking up around 2016, as explained by Parker Brogdon in his blog post found at <https://blog.juristat.com/5g-technology>), this patent is, however, one that further develops 5G’s use just the same as television was once upgraded from black-and-white to color.

This 40-page patent with 20 figures is directed towards determining and modifying transport block size (TBS) for more efficient delivery of data across a network. Ultimately, this gets to the heart of dynamic handling of data packets and enables an improved wireless communication system that many of us benefit from today. We can expect that with the number of citations this patent has received, continued efficiency-gains in this realm are to be expected.

In conclusion, data for the above “cited by” numbers were gathered from PatSnap on December 9, 2024, and as can

be seen, the number of citations for the top spot are incredibly close. It’s an inspiring time to witness these technological advances, and only time will tell whether these patents truly end up being the trailblazing inventions they appear to be thus far.



FDA Issues Order Noting Resolution of Tirzepatide Shortage: Update for Compounding Pharmacies



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On December 19th, the FDA issued a FDA declaratory order noting the resolution of the shortage for tirzepatide injection products, including Mounjaro and Zepbound. The tirzepatide shortage, which began in December 2022, was driven by overwhelming demand for these breakthrough medications used in managing type 2 diabetes and obesity. The FDA’s most recent decision, effective December 19, 2024, affirms the resolution of the shortage while recognizing potential localized disruptions due to supply chain dynamics. This development signals the end of the special regulatory conditions that allowed compounded tirzepatide products to play a critical role during the shortage.

For background, in October of 2024, the FDA had initially removed tirzepatide from the shortage list. Immediately following this action, Outsourcing Facilities Association (“OFA”) and North American Custom Laboratories, LLC, doing business as FarmaKeio Custom Compounding, sued the FDA, claiming the decision was a “reckless and arbitrary decision – lacking any semblance of lawful process.”

As a result, the FDA backed off its decision, saying it would revisit the ruling. With this order, the FDA is doubling down on its ruling that tirzepatide is once again off of the shortage list.

What This Means for Compounding Pharmacies

This decision has direct implications for compounding pharmacies that have been producing compounded versions of tirzepatide under Sections 503A or 503B of the FD&C Act during the shortage. With the shortage now resolved according to the FDA, these pharmacies are expected to cease compounding tirzepatide, as federal law generally prohibits compounding copies of commercially available drugs unless they are in shortage.

The FDA has outlined a transitional enforcement discretion period to facilitate a shift away from compounded tirzepatide products. After these grace periods, compounding pharmacies must cease compounding tirzepatide unless authorized under different legal or regulatory conditions.

60-Day Enforcement Discretion Window for 503A Compounders: For state-licensed entities compounding under Section 503A, the FDA will not take enforcement action until February 18, 2025.



90-Day Enforcement Discretion Window for 503B Outsourcing Facilities: For outsourcing facilities compounding under Section 503B, the enforcement discretion period extends until March 19, 2025.



It will be key to plan for the end of the enforcement discretion period and to (1) stop compounding tirzepatide from bulk substances after the specified dates and (2) avoid producing compounded products that are essentially copies of Mounjaro or Zepbound.

Regarding other GLP-1 receptor agonists, such as semaglutide (marketed as Ozempic and Wegovy), the FDA's December 19th order does not directly address these products. The shortage status of each drug is assessed individually. As of the latest updates, semaglutide remains on the FDA's drug shortage list, allowing for continued compounding under specific conditions.

The evolving implications of cases such as OFA v. FDA and updates from the FDA highlight the need for continued vigilance and proactive planning. Compounding pharmacies should stay informed about the shortage status of each GLP-1 receptor agonist to ensure compliance with FDA regulations, and engage a regulatory attorney who is experienced in working with the FDA for guidance specific to their situation. Stay tuned for further updates on the OFA case and associated FDA actions which may arise in advance of the end of the enforcement discretion period.

Reduced European Patent Office Fees for Small Entities



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The European Patent Office (EPO) introduced a new fee reduction program this year to assist small entities, including micro-enterprises, natural persons, non-profit organizations, universities, and public research organizations. Effective April 1, 2024, this initiative aims to make the patent process more accessible for smaller and less experienced applicants by reducing the financial burden of securing patent protection in Europe.

Under this program, qualifying entities can receive a 30% discount on certain official fees, including filing fees, search fees, examination fees, designation fees, grant fees, and renewal fees. The reduced fees apply to applications filed directly with the EPO, as well as to those entering the European phase under the Patent Cooperation Treaty (PCT).



To qualify for the fee reductions, applicants must meet specific criteria:

Small Entity: Applicant must be a microenterprise (defined as a business with fewer than 10 employees and an annual turnover or annual balance sheet total of less than €2 million), a natural person, a non-profit organization, a university, or a public research organization.

Application Cap: Applicant must have filed fewer than five European patent applications or Euro-PCT applications within the five years preceding the relevant application date.

For applications with multiple applicants, each must satisfy these eligibility requirements.

Unlike some prior EPO initiatives, these fee reductions are available regardless of the applicant's language, nationality, residence, or principal place of business. Thus, U.S.-based applicants are eligible to benefit from the program.

Although the EPO's 30% reduction is not as generous as the 60% fee reduction offered to small entities in the United States, it still represents a substantial savings for applicants. The table below illustrates the potential cost savings for certain fees:

Fee Type	Standard Fee	30% Savings
Filing Fee	€135 (~\$140)	€40.50 (~\$42)
Search Fee	€1520 (~\$1600)	€456 (~\$480)
Examination Fee	€1915 (~\$2015)	€574.50 (\$604.50)
Designation Fee	€685 (~\$720)	€205.50 (\$216)
Grant Fee	€1080 (~\$1135)	\$324 (\$340.50)

These savings can make a meaningful difference for smaller entities, particularly those managing limited budgets for intellectual property protection. For small entities in the United States and elsewhere, this program provides an excellent opportunity to reduce costs while pursuing European patent protection.

5 Million PCT Publications - 47 Years In the Making



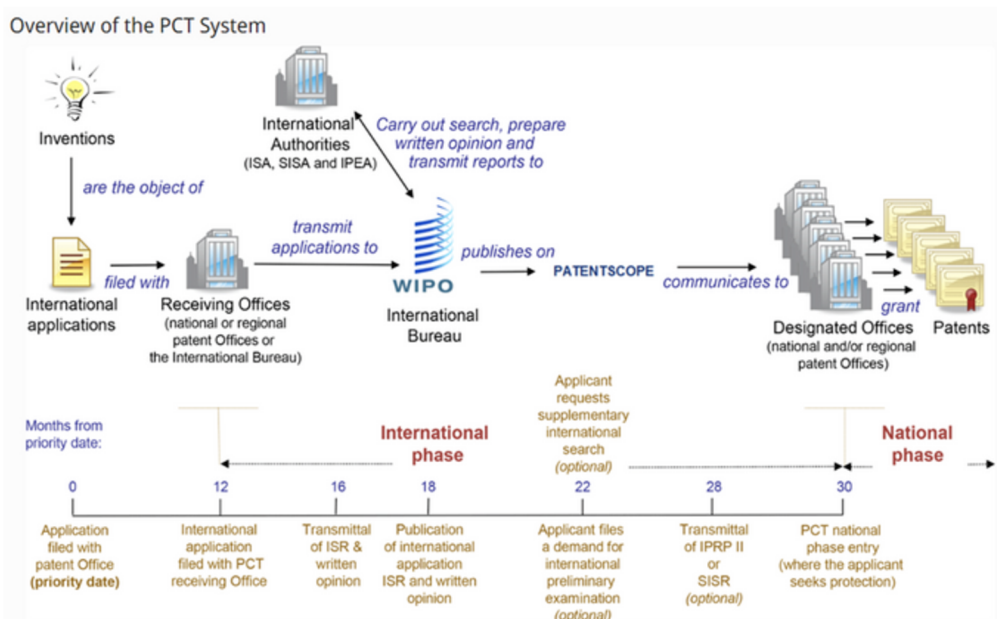
JILL N. LINK, Pharm.D., JD

Partner

Samsung Electronics of the Republic of Korea received the honor of being the five millionth published PCT on November 29, 2024. This milestone for the Patent Cooperation Treaty – generally referred to as PCT – was 47 years in the making. It was also fitting that one of the largest patent filers receives notoriety and attention, as Samsung Electronics was the second largest filer this year with almost 4,000 filings in 2024 alone! The application can be viewed here: <https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2024242518>.

The PCT is a commonly utilized international tool – where the filing of a single international patent application in one language permits the patent filer to obtain protection in 158 member countries (list available here: [The PCT now has 158 Contracting States](#)). The World Intellectual Property Organization (WIPO) is a United Nations agency that seeks to protect intellectual property across global borders. WIPO and the PCT provide ease in accessing information about the global status of patent filings through the international PCT application. A PCT is also aimed to make patent filings ‘worldwide’ more affordable and streamlined.

The following graphic from WIPO explains the general PCT process where an invention can be protected as a first-filing PCT or claiming priority to a priority filing (such as with the USPTO). The PCT is filed in a particular receiving office based on the identity of the patent applicant. Generally for US inventors the USPTO is the receiving office, which then transmits the application to WIPO for worldwide publication and initial examination. Following the ‘international phase’ of a PCT the patent applicant selects countries of interest for examination and ultimate patent granting, which is referred to as the ‘national phase.’



Additional information on the international phase and national phase of a PCT is available from WIPO here <https://www.wipo.int/pct/en/fags/fags.html>.

Use of the PCT by patent filers has continued to increase over the past decade. In 2023 the global patenting activity exceeded 3.5 million PCT filings, and now we see the five millionth publication (with total filings in excess thereof). PCT filings are often viewed as a global indicator of not only innovation trends but also economic forecasts. Therefore, the continued increase in filings – as evidenced by the recent five millionth publication – suggests continued optimism for global economies with viable patent offices.

Jill Link is a Partner, Patent Attorney and oversees the foreign department of McKee, Voorhees & Sease, PLC (MVS). For additional information please visit www.ipmvs.com or contact Jill directly via email at jill.link@ipmvs.com. MVS attorneys and agents regularly file and advise on PCT strategies and should be consulted for specific inquiries as this publication provides filing and process data only and does not provide legal advice as to proper use of the PCT.

Trademark Law Update - Penn State v. Vintage Brands Jury Broadens Licensing Rights, Expanding Use of Trademarks as an Asset of Their Own



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A Pennsylvania jury recently expanded the scope of what conduct constitutes infringement in a highly-watched case between the Pennsylvania State University and a seller of vintage branded apparel.

As a result, consumers' understanding—or perhaps, misunderstanding—of trademark law can support infringement, thereby extending a trademark owner's right to exploit its trademarks as an individual asset through licensing. *The Pennsylvania State University v. Vintage Brands, LLC. Et. Al.*, 4:21-cv-1091, (M.D.P. Nov. 19, 2024) (“*Penn State v. Vintage Brands*”), No. 335. More specifically, a consumer's belief that the defendant would have needed a license to use Penn State's marks, even if incorrect, may now form a basis to find infringement.

Additionally, by finding the seller's contracted manufacturer liable for direct, rather than contributory infringement, the jury further extended the conduct constituting infringe to include making and distributing goods for another despite not designing or selling them; this is a troubling notion for manufacturers.



The goals of trademark law have traditionally been two-fold: (1) to aid and protect consumers from confusion as to the source of the product or service they are considering for purchase and (2) to protect a trademark owner's ability to control its reputation and investments therein.

In furtherance of those goals, Congress enacted the Lanham Act in 1946. Section 43(a) of the Lanham Act prohibits the use of marks and other designations which are likely to cause confusion as to the affiliation, connection, association, origin, sponsorship, or approval of one's goods, services, or commercial activities with another person. 15 U.S.C. § 1125(a).

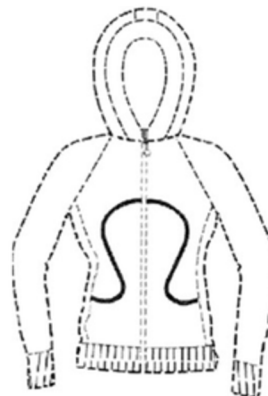
Historically, trademark law had sought to balance the fundamental need for businesses to freely compete in the market versus the potential harms to consumers and rights holders in the absence of these monopolistic restraints.

More recently, trademark law has developed to favor an owner's property interests in its marks and allowing for the exploitation of those marks as an asset separate from their use to identify the owner. Many commentators trace this expansion of the law back to the Fifth Circuit's *Boston Professional Hockey Ass'n* decision, and criticize the court's conflation of confusion as to source or sponsorship of the goods with confusion as to source or sponsorship of the mark itself. *Boston Professional Hockey Ass'n, Inc. v. Dallas Cap Emblem Manufacturing, Inc.*, 510 F.2d 1004 (5th Cir. 1975).

Furthering this trend, on November 19, 2024, the jury in *Penn State v. Vintage Brands* returned a verdict finding Vintage Brands LLC and Sportswear Inc. of directly infringing several marks owned by Penn State including its name, current logos and legacy logos.

Penn State brought an action against a seller of apparel, Vintage Brands and its manufacturing partner, Sportswear Inc. Penn State's suit claimed that both parties lacked a license to use its trademarks and thus directly infringed its marks where Vintage brands operated a website to sell apparel bearing those marks, and Sportswear, by agreement, affixed the marks and distributed the apparel as they were ordered from Vintage brands' website.

In response, Vintage Brands and Sportswear argued that the marks were used in an ornamental fashion. In trademark law, the concept of ornamentality is used by a defendant to argue that the mark in question is perceived as an attractive design rather than a symbol to be used to identify the source that product. For example, the traditional LuluLemon logo, when applied to the design of a hood, was determined to be ornamental and denied registration by the United States Patent and Trademark Office. *In re Lululemon Athletica Canada Inc.*, 105 U.S.P.Q.2d 1684, 1691, 2013 WL 326567 (T.T.A.B. 2013).



More specifically, Vintage Brands and Sportswear contended that their own use was ornamental and that consumers would not view the mark as indicating the source of the apparel or purchasing the goods because they believed them to be produced by Penn State.

Instead, they asserted that consumers purchased the goods because they wanted to identify themselves as fans or supporters of Penn State and desired the clothes to communicate that to others; a non-source identifying and thus non-trademark function.

Vintage Brands and Sportswear additionally argued that Penn State does not, and consumers would not expect it to, produce or sell apparel which bears its marks.

* * *

The court expressed concerns that providing exclusionary rights to Penn State on the basis that consumer's believe Vintage Brands would need a license in order to sell its apparel would seem to bend the foundation of trademark law. However, the jury nevertheless found that belief sufficient to constitute confusion, and thus infringement, with respect to approval or affiliation as prohibited by the Lanham.

Finally, while the jury did not find that an entity who merely manufactures and applied the mark to goods is liable for direct infringement; they did find that a manufacturer who thereafter distributes the goods—even at the direction of the designer and seller—is liable for direct infringement in certain circumstance.

Accordingly, manufacturers who distribute goods for a selling entity may now have a greater, proactive duty to ensure that they are not using another entity's intellectual property if they wish to avoid direct infringement.

MVS: SUPPORTING INNOVATION EVENTS

[Iowa Association of Business & Industry's Leadership Iowa Meeting](#)

January 8-10, 2025 - Des Moines, IA

Sarah M.D. Luth, Patent Attorney in the MVS Biotechnology and Chemical Practice Group and Co-Chair, MVS Data Privacy and Cybersecurity Practice Group

[Iowa Association of Business & Industry's Leadership Iowa Meeting](#)

March 6-7, 2025 - Des Moines, IA

Sarah M.D. Luth, Patent Attorney in the MVS Biotechnology and Chemical Practice Group and Co-Chair, MVS Data Privacy and Cybersecurity Practice Group

[ASTA Vegetable & Flower Seed Conference](#)

January 31-February 4, 2025 - Monterey, CA

Heidi Sease Nebel, Patent Attorney and Chair, MVS Biotechnology and Chemical Practice Group

[AUTM National Meeting](#)

March 2-5, 2025 - National Harbor, MD

Heidi Sease Nebel, Patent Attorney and Chair, MVS Biotechnology and Chemical Practice Group

Gregory Lars Gunnerson, Intellectual Property Attorney in the MVS Mechanical Electric Practice Group

Vanessa Lancaster, Ph.D., Patent Attorney and MVS Senior Counsel

Melissa M. Mitchell, Patent Attorney in the Biotechnology and Chemical Practice Group

MVS will host a booth at this event.

[Iowa Biotech Showcase and Conference](#)

March 4-5, 2025 - Ankeny, IA

Cassie J. Edgar, Patent Attorney and Chair, MVS [Regulatory Law Practice Group](#) and Co-Chair, [Data Privacy and Cybersecurity Practice Group](#)

Brian Keppler, Ph.D., Senior Patent Agent in the Biotechnology and Chemical Practice Group

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