

DAY ONE PROJECT

Streamlining the Patent Application Process to Nurture the Innovation of Tomorrow

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Summary

To clear a path for the innovations that will fuel our nation’s economic recovery, the Biden-Harris Administration should streamline the patent application process by improving the correspondence between patent claims and the specification, supporting search clarity, and ensuring concise specifications. Not only would this reduce the time lost to bureaucratic paperwork, but these efforts would also give innovators a more efficient road to acquire patents. In turn, applicants, examiners, and the public at large would benefit from the new industries and innovations to come.

Challenge and Opportunity

Whether in the form of a lifesaving COVID-19 vaccine or new products to satisfy the demands of the dynamic 21st century economy, patented innovations create the foundation for advancements that meet our societal needs. The detailed technical descriptions within patents teach the public about new breakthroughs and provide notice of the boundaries between private patent rights and the public domain. The clarity of claims in patent applications make it possible for the United States Patent and Trademark Office (USPTO) to work efficiently and effectively in protecting valuable new innovations.

Unfortunately, applied for- and issued-patent claims often fail to clearly demarcate the legal metes and bounds of the invention. This lack of clarity hampers the work of the agency and creates legal uncertainty for patent-holders and the public. When it is unclear what an applied-for patent claim covers, the patent examiners search for the prior art that is needed to determine an application’s compliance with the legal requirements of novelty (35 U.S.C. 102) or non-obviousness (35 U.S.C. 103) is more arduous. Clarity defects may also be incurable under 35 U.S.C. 112, leading applicants to lose out on patenting and the Office to lose out on issuance and maintenance fees. A survey of examiners by the USPTO found that out of 29 areas of application readiness, the biggest gaps involved the disconnect between the inventive concept in the specification and the claimed innovation.¹

Once granted, patents with unclear claims can chill innovation by failing to establish what products or processes would infringe the patent and by failing to create a consistent target to engineer around. Not only do unclear patents create a problem for those in competition with the patent holder, an unclear patent can be invalidated for failing to “particularly point out and distinctly define” the claim (see 35 U.S.C. 112(b)). Unclear patent claims also disadvantage U.S. inventors vis-a-vis their foreign counterparts. For example, largely due to the uncertainty on the scope of the invention, the average cost to litigate a patent per case in the U.S. is \$3.5 million — when costs in Germany (\$0.3 million) and China (\$0.075 million) are much lower.

¹ USPTO, 2017, Patent Quality Chat Examiners Provide Their Views on Prepared Applications: Application Readiness Survey, https://www.uspto.gov/sites/default/files/documents/QChat_Oct_12_2017.pdf

Across these contexts, small businesses and startups are at a special disadvantage because they have less capital than large businesses to prosecute their applications, contest patents being asserted against them, or defend against challenges to their patents. This results in fewer young businesses acquiring patents, and fewer young businesses surviving an interaction with the patent system.

Plan of Action

To support efficient (compact) patent prosecution, establish clear patent boundaries, and minimize unnecessary patent litigation, the United States Patent and Trademark Office (USPTO) should:

- **Ensure correspondence between claims and the specification.** The USPTO should continue to enforce the requirements of 35 U.S.C. Section 112. To improve application readiness, the USPTO should, consistent with previous actions, identify best practices for patent drafting that comply with claim clarity requirements and enhance compact prosecution. It should also work to level the playing field, for example, by making basic tools of patent clarity currently used by certain applicants available to all.
- **Ensure clarity pre-search.** The USPTO should build upon its pre-diagnostic search pilot program to formalize the ability of examiners to seek clarification from applicants about the meaning and scope of claim terms prior to initiating a prior art search.
- **Consider and mitigate any negative impact of long (35 pages+) applications.** The USPTO should undertake a study regarding the impact of specifications in excess of 35 pages and whether or not they impose examination burdens that warrant a fee for length.

Ensuring Correspondence between the Claims and the Specification

35 U.S.C. 112 requires that patent specifications be written clearly, and “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.”

Identifying drafting approaches that can meet these requirements in a way consistent with compact prosecution would help strengthen the correspondence between the claims and the specification, in service to the USPTO, applicants, and the public. These approaches could be incorporated into existing examination guidelines or co-developed with stakeholders, as in the case of Interview Best Practices developed by the USPTO and the American Intellectual Property Law Association.

One way is to organize figure elements into a sequential list. This would identify inconsistencies in the claim or specification terms as well as concisely list the correlated elements of the drawings. Another way, as enforced by Rule 43 of the European Patent Convention, requires

applicants to identify claim elements by numeral. This would similarly identify the elements associated with respective reference numerals throughout the specification and claims. Either practice will focus the application and overcome inconsistencies in drafting. For instance, if a claim recites “a second arm (12)” and then “the secondary arm (12)”, it is likely the secondary arm and the second arm are one in the same. Similarly, a sequential list of reference elements would flag “secondary arm” as problematic through its absence from the list.

As described above, small entities are more likely to receive 112(b) rejections, as well as to “drop out” of the application process, than are large entities. To level the playing ground, we suggest that the USPTO, consistent with the support it provides to pro se and pro bono applicants, work to ensure that applicants have access to claim clarity technology. This access should narrow the applicant readiness gap.

Clarification of Search Request

Patent applications are examined under the principles of compact prosecution. Regardless of whether every claim violates at least one statutory section, every patentability requirement should be addressed for every claim. The goal of this principle is to provide applicants with a complete understanding of statutory deficiencies such that they might remedy all of them in a timely manner.

But when the claims are unclear, an examiner must apply one of many possible understandings of the claims to a search, and apply prior art based on that chosen understanding. Given the outcome of that search, the applicant might drastically amend their claims to be more in keeping with the invention, to differentiate from the cited prior art, or both. The amended claims would likely require the application of new prior art, found within the initial search or within a supplemental search. The extensive work of the examiner to provide compact prosecution, and the work of applicant to revise the claim language could still result in a final rejection necessitated by amendment.

The USPTO should allow examiners to ask applicants to define what should be searched, as has long been the practice in other jurisdictions, to the benefit of both applicant and examiner and without any delay to compact prosecution. The examiner would receive credit for the time spent, and the applicant would have the opportunity to clarify the claims prior to a first office action.

Additional Fee for Applications in Excess of 35 Pages

As a fee-funded agency, the USPTO must collect fees that match expenditures. Lengthy applications take additional time to examine by utilizing figures and details peripheral to the claimed subject-matter. Take U.S. application 16/587,185, which used 52 pages to provide figures and description for the following independent claim:

- 1. A Micro-Electro-Mechanical System (MEMS) structure comprising: at least one oxide peg; and a beam comprising at least one insulator layer and a metal layer over the at least one oxide peg.*

It seems reasonable that support could be provided for this claim in less than 35 pages. As it stands, the 52 pages might be more necessary for portions of the other 40 some applications that share this specification. The additional fee would not be a bar to prevent such applications, but a deterrent to discourage applicants from over burdening examiners.

Consistent with the goal of compact prosecution and patent clarity, the USPTO should investigate amending 37 C.F.R. 1.16(s) to trigger additional fees for submissions that exceed 35 sheets. This would not only promote concise drafting; it would enable the burden on the examining corps to be spread more equitably. This fee would not create a barrier to disclosures over 35 pages while incentivizing concise drafting where possible.

Conclusion

The proposed actions—to improve the correspondence between patent claims and the specification, support search clarity, and ensure conciseness in specifications—will result in the expedited examination of applications and clearer claims in patents. The benefits extend not only to applicant and examiner, but also the public at large. The hurdles cleared by these actions today will open the path for the innovations of tomorrow.

Frequently Asked Questions

What is a patent claim, and why is it important?

A patent claim provides the legal description of the patented invention. When a patent is analyzed in a court proceeding determining infringement, it is the patent claim that establishes the language for the assessment. A patent is comprised of a “specification,” a technical description and accompanying drawings, and one or more claims. Like fences in real property, a patent’s claims delineate the scope of the legal “right to exclude” competitive development conferred by the patent.

What relation do the claims and the surrounding disclosure have?

Patent claims are read and interpreted in light of the specification, which includes the abstract, background of the invention, detailed description and drawings.

Why is it beneficial to ensure the correspondence between the claims and other parts of the specification?

It is not uncommon to have over 30 major elements from the claims referenced in the drawings, and for mentions of those elements to appear throughout the detailed description. Common causes of confusion include incorrect reference numerals or references, for example “a second member” misrepresented as “a secondary member.” Aids like indexes can provide applicants, examiners, and the public a quick reference for identifying drawings’ elements. They also allow examiners and applicants to quickly spot needed corrections.

What patent laws generally constitute the grounds for rejection during prosecution, or invalidity through litigation?

Subject matter eligibility – Patent claims must be directed to a bounded concept, as opposed to an abstract idea, law of nature, or natural phenomena. If a patent were sought for a discovery such as Newton’s law of gravity, or Einstein’s law of relativity, the claim(s) would be rejected during prosecution or invalidated during litigation. Advances in aviation technology utilizing Newton’s law of gravity, or advances in nuclear technology enabled by Einstein’s law of relativity are eligible subject-matter. The underlying abstract principles are not eligible subject-matter. See 35 U.S.C. 101.²

Novelty – Patent claims cannot be directed to a product or process that has been publicly described by another party prior to the patent filing. Patent claims also cannot cover subject matter offered for sale by the inventor more than a year prior to filing. This section, along with 35 USC 103, establishes the basis for applying prior art. See 35 U.S.C. 102.³

² 35 U.S.C. § 101. Inventions Patentable. United States Patent and Trademark Office (USPTO).

³ 35 U.S.C. § 102. Conditions for patentability; novelty. USPTO.

Obviousness – Patent claims cannot be directed to a product or process that would have been obvious to an average person within the technological field of the invention. This section, along with 35 USC 102, establishes the basis for applying prior art. See 35 U.S.C. 103.

Enablement/Description/Clarity – Patent specifications must enable an average person within the field of the technology to understand the invention and provide sufficient written description to prove conception of the invention. This section also requires that a patent claim clearly establish the boundaries of the patent, thereby informing the public the scope of infringement. See 35 U.S.C. 112.⁴

Does this proposal build on any previous work of the USPTO?

Glossary initiative⁵ - In June 2013, the White House issued a series of Executive Actions concerning high-tech patent issues. Executive Action No. 2 concerned functional claiming, specifically, (i) improving functional claim clarity; and (ii) possible glossary usage in patent specifications. The White House assigned Executive Action No. 2 to the USPTO, stating: "The AIA made important improvements to the examination process and overall patent quality, but stakeholders remain concerned about patents with overly broad claims-particularly in the context of software.

Clarity of the Record Pilot⁶ - The Pilot focuses on best practices regarding enhanced documentation of claim interpretation, more detailed interview summaries, and more precise reasons for allowance. The Pilot studies the impact of implementing such best practices during examination. The Pilot concluded August 20, 2016. During focus sessions and other meetings after the conclusion of the Pilot, participants developed a list of best practices for enhancing the clarity of the prosecution record.⁷

Diagnostic Interview Pilot⁸ - The pilot seeks to evaluate the effectiveness of diagnostic (i.e. pre-search) interviews for providing more focused searches prior to first action on the merits. The goal of the pilot is to improve overall examination, and the specific value of the diagnostic interview is to assess understanding of both the invention as a whole and interpretation of the claims.

⁴ 35 U.S.C. § 112 Specification. USPTO.

⁵ Glossary Initiative. USPTO <https://www.uspto.gov/patent/initiatives/glossary-initiative>.

⁶ Clarity of the Record Pilot. USPTO. <https://www.uspto.gov/patent/initiatives/clarity-record-pilot>.

⁷ See Clarity of the Record Pilot Best Practices. USPTO.

<https://www.uspto.gov/sites/default/files/documents/Clarity%20of%20the%20record%20Pilot%20Summary%20of%20Best%20Practices.pdf>.

⁸ Diagnostic Interview Pilot. USPTO. Slides 4-11. <https://www.uspto.gov/sites/default/files/documents/Quality%20Initiatives.pdf>.

First Action Interview Pilot Program⁹ - Under the program, participants are permitted to conduct an interview with the examiner after reviewing a Pre-Interview Communication providing the result of a prior art search conducted by the examiner. Participants experience many benefits including: (1) the ability to advance prosecution of an application; (2) enhanced interaction between applicant and the examiner; (3) the opportunity to resolve patentability issues one-on-one with the examiner at the beginning of the prosecution process; and (4) the opportunity to facilitate possible early allowance.

Complex Work Unit Pilot Program¹⁰ - As part of its continuing effort to improve and integrate existing electronic systems and to promote full electronic patent application processing, the United States Patent and Trademark Office announces the Complex Work Unit (CWU) Pilot program. It is anticipated that this program will help the Office to simplify on-line access to, and availability of, USPTO information and data for purposes of improved examination of applications and publication of pre-grant publications and patent grants. CWUs, such as chemical structure drawings, mathematical formulae, three-dimensional protein crystalline structure data and table data, often add significant complexity and cost to the examination and publication of patent applications. The Office anticipates that submission and internal handling of CWUs in original, source formats will streamline and improve the processing, examination, and publication of patent applications.

After Final Consideration Pilot 2.0¹¹ - AFCP 2.0 authorizes additional time for examiners to search and/or consider responses after final rejection. Under AFCP 2.0, examiners will also use the additional time to schedule and conduct an interview to discuss the results of their search and/or consideration with the applicant, if the applicant's response does not place the application in condition for allowance. In this way, the applicant will benefit from the additional search and consideration afforded by the pilot, even when the results do not lead to allowance.

⁹ First Action Interview Program. USPTO. <https://www.uspto.gov/patents-application-process/applying-online/full-first-action-interview-pilot-program>.

¹⁰ Complex Work Unit Pilot Program. USPTO. <https://www.uspto.gov/patent/initiatives/complex-work-unit-pilot-program>

¹¹ After Final Consideration Pilot 2.0. USPTO. <https://www.uspto.gov/patent/initiatives/after-final-consideration-pilot-20>.

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About the Author



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About the Day One Project

The Day One Project is dedicated to democratizing the policymaking process by working with new and expert voices across the science and technology community, helping to develop actionable policies that can improve the lives of all Americans, and readying them for Day One of the next presidential term. For more about the Day One Project, visit dayoneproject.org.