



ALJ Finds Polycrystalline Diamond Compact Claims Patent Ineligible Because They Recite Conventional Structure Combined with Abstract Results

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Complainant US Synthetic filed a complaint against numerous respondents for importing products that infringe U.S. Patent Nos. 8,616,306, 10,507,565 and 10,508,502. The claims-at-issue recite a PDC comprising particular structural features, including diamond grains of a maximum size and a catalyst including cobalt. The claims further recite that the PDC exhibit certain properties—e.g., coercivity, electrical conductivity, G-ratio, thermal stability, permeability and/or lateral dimension—each within a claimed range.

The ALJ analyzed eligibility using the Supreme Court’s two-step *Alice* framework. In step one, the court determines whether the claims are “directed to” a patent-ineligible concept, such as an abstract idea. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 217 (2014). If they are, the court proceeds to step two and considers “the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Id.*

Addressing step one, the ALJ found that the claims recite compositions of matter not found in nature, including structural features (e.g., grain size and the presence of a catalyst) that are not problematic under *Alice*. But the ALJ found that the claims also recite performance measures (e.g., G-Ratio and thermal stability) and side effects (e.g., electrical and magnetic parameters) that are problematic. According to the ALJ, the structural features were well-known and conventional, while the performance measures and side effects were abstract goals, resulting in the claim reading on any and all means of achieving the claimed goals.

The ALJ found the claims were analogous those in *Certain Light-Emitting Diode Products, Fixtures, and Components Thereof*, Inv. No., 337-TA-1213 (Aug. 17, 2021) (Initial Determination), *aff'd in pertinent part*, Comm'n Op. (Jan. 14, 2022). In *Light-Emitting Diodes*, the claims covered a lighting device comprising a solid state light emitter with a “wall plug efficiency of at least 85 lumens per watt.” Those claims encompassed ineligible subject matter because they were directed to an abstract goal of efficiency, however achieved.

Complainant argued that the claims were not directed to a law of nature and cited cases for the proposition that an invention can be claimed by reciting its properties. The ALJ, however, found that the claims are problematic, not because they recite a law of nature or properties, but because the claimed properties are a result or effect, and thus abstract. The ALJ distinguished patent-eligible properties that are design parameters, such as electrical insulation properties, needed to improve performance of the claimed apparatus. The ALJ decided that is not the context here because the claimed properties are not desirable features as such; they are just a result of other desirable features.

Addressing step two, the ALJ found that the claims do not recite any limitations that would transform the nature of the claims into a patent-eligible application. According to the ALJ, the claims recite structural limitations that are generic to all PDCs, and fail to recite structures or any other inventive feature to achieve the objectionable claim limitations (G-Ratio, thermal stability, electrical and magnetic parameters). The ALJ discussed a “mismatch” between the specification, which may teach a skilled artisan how to make the PDC having the recited characteristics, and the claims, which recite an abstract idea instead of the particular structures or methods of manufacturing discussed in the specification.

Practice Tip: Patent owners should avoid claiming the advance over the prior art using limitations that are simply results or effects, i.e., in purely functional terms that encompass an abstract idea. Instead, Patent Owners should describe and claim structures in the claimed system and how the claimed characteristics improve the system’s performance, showing that such claim elements are technologically innovative and not generic. In the PDC field, patent owners should describe and claim innovative design choices or manufacturing variables in particular applications, and avoid relying only on performance measures or side effects that are indirect measures of the effectiveness of such design choices and manufacturing variables.

Categories

Patent-Ineligible Abstract Ideas

35 U.S.C. § 101

Patent Infringement

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