

Common Sense Approach Prevails in Determining Subject Matter Eligibility of Compositions of Matter

Over the last 15 years, the discussion over the types of subject matter that are considered patent eligible under 35 U.S.C. § 101 has been mostly focused on the software and biological fields. Several years ago, the Federal Circuit decision in *American Axle* held an axle patent ineligible because the claims covered an abstract idea. See *Am. Axle & Mfg. v. Neapco Holdings LLC*, 939 F.3d 1355. This decision broadened the patent eligibility discussion to include the mechanical field and sparked concerns over what subject matter is patent eligible. A recent decision from the Federal Circuit clarified which mechanical structures and matters of composition (e.g., pharmaceutical compositions) are considered patent ineligible.

US Synthetic (USS) manufactures polycrystalline diamond compacts (PDCs). The PDCs include a polycrystalline diamond table (e.g., layer) bonded to a substrate. The polycrystalline diamond table includes a plurality of diamond grains defining interstitial regions (i.e., gaps) therebetween. These interstitial regions are at least partially filled with a catalyst, such as cobalt. The PDCs are formed by subjecting diamond grains and the substrate to high pressures and temperatures to bond the diamond grains together and bond the polycrystalline diamond table to the substrate. The catalyst material facilitates this bonding but can cause problems in the PDCs during use.

USS filed several patent applications directed towards improved methods and improved PDCs. The claims at issue of U.S. Patent No. 10,508,502 ('502 Patent) recited a PDC that included a polycrystalline diamond table "bonded to a substrate." The claims further recited that the polycrystalline diamond table included "a plurality of diamond grains," "a catalyst including cobalt," the lateral dimensions of the polycrystalline diamond table, the average grain size of the diamond grains, and several magnetic properties. The specification of the '502 Patent disclosed how magnetic properties correlate to the structure of the polycrystalline diamond.

USS asserted that '502 Patent in a case filed before the International Trade Commission (ITC). Relying on *American Axle*, the ITC held that the claims of the '502 Patent were

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directed towards an abstract idea and were patent ineligible. See *Commission Decision*, 2022 WL 15792877. The ITC argued that “the measurable characteristics are the result of the sintering conditions and input materials that went into manufacturing the PDC” and that any connection between the magnetic properties and the structure of the PDC amounts to a “casual connection [that] is so loose and generalized that the claimed limitations appear to be little more than side effects.” The ITC’s decision, if upheld, would overturn 100s of years of chemical drafting practice and put many patents, including pharmaceutical patents, at risk.

The Federal Circuit overturned the ITC’s decision. *US Synthetic Corp. v. ITC*, 2025 U.S. App. LEXIS 3334. The Federal Circuit held that the PDC recited in the ‘502 Patent is directed towards a “non-abstract composition of matter” and that “the material properties [recited in the claims] correlate to the diamond table’s structure.” The Federal Circuit reasoned that “the specification [of the ‘502 Patent] explains how the claimed magnetic properties correlate to structural aspects of the claimed PDC.” The court determined that the ITC’s “expectations for precision between the recited properties and structural details . . . is too exacting.”

The Federal Circuit’s decision clarified that claims directed towards mechanical structures or composition of matter are not patent ineligible for reciting the properties of the structures or the composition of matter. Instead, to be patent eligible, the recited properties just need to be tied to the structure or composition of matter. The Federal Circuit’s holding is important since, often, it may be easier and more precise to recite the properties rather than the structure or composition exhibiting the properties. Importantly, the specification of the patent application should clearly correlate the properties of the structure or composition of matter to the claimed structure or composition exhibiting the property.

If you or your clients have questions or concerns about this latest change to subject matter eligibility laws, speak to your patent counsel or let us know if we can assist you.