

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INARI AGRICULTURE, INC.,
Petitioner,

v.

PIONEER HI-BRED INTERNATIONAL, INC.
Patent Owner.

Case No. PGR2024-00025
Patent No. 11,707,033

**PETITIONER'S REPLY TO PATENT OWNER'S PRELIMINARY
RESPONSE**

The POPR urges a radical obviousness framework unique to plant utility patents. If adopted, PO's approach would allow plant breeders to obtain patents as of right any time they cross two parent plants and obtain an inbred child—even when (as here) **both** parents were disclosed in the prior art and had previously yielded an earlier child (i.e., an older “sibling” of the variety) itself disclosed in the prior art. No authority permits the Board to exempt plant utility patents from the traditional *KSR* framework or a fulsome patent examination (as PO separately urges), and the Board's endorsement of such would perpetuate an endless stream of plant utility patents at the expense of the public interest and U.S. farmers.

I. Plant Utility Patents Are Not Entitled to Special Patentability Standards Conflating Novelty With Non-Obviousness

PO does not dispute that Ross (PH1VKM) and Carlone (PH2DYM) are the parents of the claimed variety (1PNZQ23). Nor does PO dispute that Heffner (PH487D) is an older sibling sharing the same parents. PO instead errs both factually and legally in trying to explain away this “scope and content of the prior art.” *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17 (1966).

PO errs factually when trying to deflect the familial relationship by repeatedly describing the “parents” as “ancestors from generations back.” POPR at 12, 25 (citing EX2004, ¶ 34). The cited paragraph concerns an outdated technique involving many generations (“F2” through F ∞) after the initial F1 child from the original cross. PO neglects that both the '020 Patent and Heffner (disclosing an

earlier cross of the same two parents) used a “doubled haploid” technique based on the F1 plants. EX1001, 37:60-38:3; EX1007, 38:54-61. With this more modern approach, there are no F2 and later generations at all. *See* EX1020 & EX1021. Instead, as PO’s own exhibits confirm, doubled haploid breeding yields “pure inbred lines within a **single** generation.” EX2043, 3; *see also* EX2029, 19:7-11.¹

PO errs legally in conflating novelty under § 102 with non-obviousness under § 103. The relevant question is not whether “two children born at different times to the same parents” will be “identical” (EX2004, ¶ 124), but rather whether the differences entitle PO to a second, later-expiring patent on the second, later-created child. While claims may be “distinguishable from the prior art,” often such “differences...are simply not sufficient to warrant a patent grant.” *Freedman Seating Co. v. Am. Seating Co.*, 420 F.3d 1350, 1363 (Fed. Cir. 2005). The obviousness test under § 103 exists because even novel inventions are not worthy of utility patents unless they go beyond the “ordinary innovation” that “is expected in the normal course.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 427 (2007).

Turning this fundamental principle upside down, PO wrongly cites the existence of the older sibling (i.e., Heffner) as purported proof why the younger one (i.e., the claimed invention) was **non-obvious**. *See* POPR at 54 (“Heffner shows that 1PNZQ23 would **not** have been obvious because Heffner derives from

¹ Emphasis added unless indicated.

the same initial cross of PH1VKM and PH2DYM, but is distinct, genetically and phenotypically, from 1PNZQ23.”); *see also id.* at 48. Under this up-is-down logic, repeatedly crossing the same two plants would make each successive child *more* deserving of a patent than its older siblings. *See id.* at 52 (“[T]he fact that PH1KVM and PH2DYM are the parents of *nineteen other distinct inbred lines* ...demonstrates that there can be no reasonable expectation of success in obtaining 1PNZQ23 based on the disclosures of Ross (PH1VKM) and Carlone (PH2DYM) alone.”). But that is a plainly illogical recipe for a patent registration system in which limitless patent thickets are spawned unfairly taxing American farmers and wrongly preempting what at best is “ordinary innovation.” *KSR*, 550 U.S. at 427.

PO also wrongly faults Petitioner for “simultaneously comparing the Table 1 phenotypes to the phenotypes of each asserted prior art reference in *aggregate*.” POPR at 50 (emphasis added). PO’s “siloed and inflexible approach” invites legal error and neglects the need under the *Graham* factors to assess the prior art “teachings *in toto*.” *Janssen Pharms., Inc. v. Teva Pharms. USA, Inc.*, 97 F.4th 915, 928 (Fed. Cir. 2024). As Petitioner explained and PO does not dispute, the prior art as a whole confirms that the ’033 Patent’s identified traits fall squarely within the range of expected outcomes when crossing Ross and Carlone. Petition at 33-35 (citing EX1003, ¶¶69-85). It was fully appropriate—indeed, necessary—for Petitioner to conduct that analysis based on the prior art in the aggregate. Any

other approach would wrongly “inflat[e] the significance of minor variations between the prior art and the claims.” *Janssen*, 97 F.4th at 928. The question is not whether the claimed 1PNZQ23 variety is “different from” the Heffner sibling (POPR at 31), but rather whether those differences entitle PO to a follow-on patent.

II. Plant Utility Patents Are Not Entitled to Special Patentability Standards Insulating Claims From Post-Grant Review and Offloading Examination to the American Public

PO also wrongly dwells on purported traits that by PO’s own admission the text of the ’033 Patent’s specification *never* identifies. Instead, PO faults Petitioner for relying on Table 1—the only data PO disclosed—because it “does not contain an exhaustive list of [those] traits a POSA would consider in conducting an obviousness analysis.” POPR at 40; *see also id.* at 50 (asserting that Table 1 is only a “partial list” and omits “certain characteristics a POSA would assess in making an obviousness determination”). PO reasons in particular that Petitioner should have grown corn plants from PO’s deposited seed (POPR at 41, 44, 45, 46, 54, 84) to compare “the full phenotypes” and also undertake a “genetic comparison” (*id.* at 34). PO’s suggestion is fundamentally flawed for numerous reasons.

First, by PO’s own description, the ’033 Patent’s deposit only reflects “*one* embodiment” of the claimed invention. POPR at 52-53. PO indeed defends the “representative seed” language as purportedly required to account for “*phenotypic and genetic variations*” (POPR at 73)—notwithstanding that PO historically

pursued narrower claims without the “representative seed” language (Petition at 75-76). By PO’s own account, therefore, the Challenged Claims are **not** limited to the particular phenotypes and genotypes reflected in any of the “at least 625 seeds of Maize Variety 1PNZQ23” that PO deposited (EX1001, 37:32-34). PO’s suggestion that Petitioner needed to assess the “full phenotypes” and genomes of the deposited seeds is therefore illogical on its face. The characteristics of the deposited seed are at best unclaimed properties and therefore immaterial to the obviousness analysis. *Graham*, 383 U.S. at 24-25 (rejecting as irrelevant purported “flexing” property that was “not a claim” and not even “hinted at” in patent’s specification). Indeed, it would be irrelevant even if the particular “embodiment” associated with the deposited seed were somehow inventive, as obviousness under § 103 does not require that all embodiments falling within the scope of the claim be non-obvious. *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1281 (Fed. Cir. 2015) (“Claims which are broad enough to read on obvious subject matter are unpatentable even though they also read on nonobvious subject matter.”).

Separately, requiring potential challengers to grow prior art seed “side-by-side” with the claimed variety (POPR at 41) would wrongly insulate plant utility claims from § 103 scrutiny in PGRs even though the non-obviousness requirement is among the reasons why “[i]t is much more difficult to obtain a utility patent for a plant than to obtain a PVP certificate.” *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred*

Int'l, Inc., 534 U.S. 124, 142 (2001). The deposited seed on which PO dwells only became publicly available “[u]pon issuance” of the ’033 Patent. EX1001, 37:44-46. At that point, the clock was ticking and Petitioner had only 9 months in which to file its PGR. § 321(c). Even if the deposit system worked perfectly and seeds became available immediately upon request (which they assuredly do **not** in reality), it would be untenable to conduct the side-by-side trials PO posits² and then prepare a petition before the statutory deadline. And in an event, no such assessment was required of, or performed by PO, to secure its patent.

PO repeatedly faults Petitioner for not comparing how the claimed inbred performs as a “hybrid parent” compared to the asserted prior art. POPR at 34, 35, 36. But such studies require researchers to grow **multiple** generations of corn—first to grow the inbred lines as breeding stock (i.e., to create the hybrids) and then to assess the hybrids themselves. The claimed variety and the identified prior art varieties all take 107-110 days to mature. Petition at 26. Even if working in greenhouse rather than real-world conditions, it would take over seven months (2 times 107 days) even after having the deposited seed in hand to generate hybrid

² While nominally suggesting there could be other ways (POPR at 41) PO offers no specifics despite insisting the ’033 Patent’s data is incomplete and Petitioner’s chart (based on all data the patent does provide) is not “reliable” (*id.* at 55).

data. No PGR could be prepared under such circumstances given the months of delays in even securing the seeds. Yet the Patent Act authorizes PGRs on any patent concerning any statutory invalidity defense. § 321(a)-(b). There is no special exception for plant breeders requiring studies post-grant not required pre-grant.

PO's theory also wrongly neglects that PGRs and IPRs for that matter exist to correct Office mistakes by permitting "a second look at an earlier administrative grant of a patent." *Cuozzo Speed Techs. v. Com. for Intell. Prop.*, 579 U.S. 261, 279 (2016). They accordingly concern the "same basic matter as the grant" and "the same interests" in ensuring "that patent monopolies are kept within their legitimate scope." *Oil States Energy Servs., LLC v. Greene's Energy Grp., LLC*, 584 U.S. 325, 336 (2018). As PO plainly appreciates, it would be unreasonable on its face to expect the Office to grow plants and conduct head-to-head studies of the sort PO demands from Petitioner. Instead, PO reasons that if the Office wanted more information than that provided by the '033 Patent's Table 1, the Office can "request" such information. POPR at 40.³ This argument is nonsensical on its face. While the Office can certainly request information necessary **for examination purposes**, it does not request additional specification disclosure post-application

³ Despite citing this mechanism here, PO actively thwarted such requests during examination of the patents Petitioner challenges in PGR2024-00019 and -00020.

filing. And in any event, if the Office allows the claims without such a request (even though by PO's own account Table 1 *omits* information "a POSA would consider in conducting an obviousness analysis"), PO demands that challengers grow multiple corn plants "side-by-side" and assess "more than just the handful of traits" Petitioner cared to disclose in the specification (all of which Petitioner considered). POPR at 40-41. Such a regime would impermissibly decouple IPRs and PGRs from the underlying patent grant even though they merely involve the Office "reconsidering" such grant. *Saint Regis Mohawk Tribe v. Mylan Pharms.*, 896 F.3d 1322, 1328 (Fed. Cir. 2018). PO seeks a plant utility registration system where the burden of patent examination falls to the American public post-grant.

Under the actual patent examination system enacted by Congress, the Office bears that burden, while PO bears responsibility to help the Office by explaining why the invention is not only new, but worthy of utility patent protection. For example, PO's specification could have explained that previous attempts to cross the new variety's parents had failed (i.e., "teach[ing] away" from further attempts), yet the inventor later found that the new cross combined the preexisting genes "in an unexpected and fruitful manner." *KSR*, 550 U.S. at 416, (discussing *United States v. Adams*, 383 U.S. 39, 40 (1966)); *see also* EX1030, 28 (Office explaining how PO's patents in *J.E.M.* disclosed "readily identifiable benefits to farmers").

Indeed, POPR mischaracterizes Petitioner's argument as suggesting that

“because the parents of the claimed 1PNZQ23 variety (PH1VKM and PH2DYM) are prior art, their existence—alone—necessarily renders 1PNZQ23 obvious.” POPR at 34. Not so. Petitioner’s obviousness grounds are specific to the facts, including the Heffner prior art (i.e., a previous cross of PH1VKM and PH2DYM) and the reality that the ’033 Patent “never even acknowledges Heffner—much less disclose anything inventive about repeating the same cross.” Petition at 1. PO never disputes this and instead relies on rhetoric wholly divorced from the specification. For example, PO reasons that “not all inbreds are created equal even when where they derive from crossing the same parent,” and only some are “capable of producing successful hybrids.” POPR at 35. But if the claimed variety actually did have such unexpected utility, PO could and should have provided such evidence. For example, U.S. Patent No. 5,159,133—issued to Petitioner’s expert Dr. Riley—included extensive head-to-head data illustrating how hybrids created from the claimed inbred line compared favorably with hybrids from prior art inbreds. EX1092, 10:39-12:3. But absent such data, PO cannot pass the buck and demand that ***Petitioner*** compare “how the claimed inbred performs as a hybrid parent compared to the asserted prior art.” POPR at 36. PO’s finger pointing is firmly directed at the American public as somehow responsible for examining its claim to patentability in the first instance, and to do so using admittedly incomplete specification data; this radical framework cannot coexist alongside *KSR*.

III. Petitioner’s “Novel or Unsettled” Legal Questions Merit Institution

Tellingly, PO does not cite any authority addressing § 112(b)’s definiteness requirement as to plant utility patents and/or claims reciting “representative seed.” Nor does PO cite any authority relying on deposits or other material “incorporated by reference” (Petition at 80-81) to satisfy the definiteness requirement under § 112(b) as distinguished from enablement and written description under § 112(a). This silence confirms that Grounds 5 and 6 raise novel and unsettled legal issues.

PO instead blatantly mischaracterizes Petitioner’s position as seeking “means-plus-function” treatment. POPR at 80. Petitioner simply analogized that the Challenged Claims implicated the “same problems” as means-plus-function claims lacking adequate supporting structure. Petition at 79-80. Specifically, through “the ordinary meaning of ‘representative’ itself, PO sought claims sweeping beyond the actual deposited seed.” *Id.* at 80. PO confirms as much when casting the deposit as merely an “*exemplary* embodiment” (POPR at 43). PO never disputes that “representative seed” seeks to broaden the claims even *beyond* “the deposited seed and plants derived from that seed” (Petition at 74).

PO also wrongly dwells on a few stray patents (EX2029-2032) assigned to Petitioner. That § 112 problems also exist in other patents is not a defense.

Date: September 9, 2024

/Scott A. McKeown /
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CERTIFICATE OF SERVICE UNDER 37 C.F.R. § 42.6 (E)(4)

I certify that on September 9, 2024, I will cause a copy of the foregoing document, including any exhibits or appendices filed therewith, to be served via electronic mail, as previously consented to by Patent Owner, upon the following:

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