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Paper 18
Entered: September 24, 2024

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.

PGR2024-00020
Patent 11,666,020 B1

Before ULRIKE W. JENKS, ZHENYU YANG, and JEFFREY W. ABRAHAM, *Administrative Patent Judges.*

ABRAHAM, *Administrative Patent Judge*.

DECISION
Denying Institution of Post-Grant Review
35 U.S.C. § 324

I. INTRODUCTION

Inari Agriculture, Inc. ("Petitioner") filed a Petition requesting a post-grant review of claims 1–20 ("the challenged claims") of U.S. Patent No. 11,666,020 B1 (Ex. 1001, "the '020 patent"). Paper 2 ("Pet."). Pioneer Hi-Bred International, Inc. ("Patent Owner") filed a Preliminary Response to the Petition. Paper 13 ("Prelim. Resp."). In addition, after receiving authorization from the Board (*see* Ex. 3002), Petitioner filed a Reply to Patent Owner's Preliminary Response (("Reply"), Paper 15) and Patent Owner filed a Sur-reply (("Sur-reply"), Paper 17).

Institution of a post-grant review is authorized by statute when "the information presented in the petition filed under [35 U.S.C. §] 321 . . . demonstrates that it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable." 35 U.S.C. § 324(a). For the reasons set forth below, we determine that Petitioner has failed to demonstrate that it is more likely than not that at least one of claims 1–20 of the '020 patent is unpatentable. Accordingly, we deny institution of a post-grant review of claims 1–20 based on the grounds set forth in the Petition.

A. Real Parties-in-Interest

Petitioner identifies itself, Inari Agriculture, Inc., as the real party-in-interest. Pet. 93. Patent Owner identifies itself, Pioneer Hi-Bred International, Inc., as the real party-in-interest. Paper 3, 1.

B. Related Matters

The parties identify no related matters for the '020 patent, filed as U.S. Patent Application No. 17/366,059 (the '059 application). Pet. 94; Paper 3, 1. According to Petitioner, "[n]o U.S. patent applications claim the benefit of the priority of the filing date of" the '020 patent. Pet. 94. Patent Owner states that the '059 application "does not claim priority to any other

patent applications or have any applications claiming priority to it." Paper 3, 1. Patent Owner further states that "the '020 patent[] is not involved in any related litigation matters." Paper 3, 1.

C. The '020 patent (Ex. 1001)

The '020 patent is titled "Maize Inbred 1PFHC43." Ex. 1001, code (54). The '020 patent discloses "[a] new and distinctive maize inbred variety designated 1PFHC43, which has been the result of years of careful breeding and selection in a comprehensive maize breeding program." Ex. 1001, 4:41–44.

The '020 patent discloses that "[t]he breeder's goal is to combine in a single variety or hybrid, various desirable traits." Ex. 1001, 1:11–12. In developing a desirable maize variety for field crops, such desirable "traits may include resistance to diseases and insects, resistance to heat and drought, reducing the time to crop maturity, greater yield, altered fatty acid profile, abiotic stress tolerance, improvements in compositional traits, and better agronomic characteristics and quality." Ex. 1001, 1:12–17. The '020 patent seeks to "develop stable, high yielding maize varieties and hybrids that are agronomically sound with maximal yield over one or more different conditions and environments." Ex. 1001, 1:24–26.

The '020 patent describes that the maize inbred variety designated 1PFHC43 "originated from a cross between inbred line PH1VNA and inbred line PH1D84." Ex. 1001, 38:27–28. First generation or F1 ears were then "selected based on genetic analysis predicting disease, insect, and agronomic phenotypic performance." Ex. 1001, 38:29–30. The '020 patent describes that "a doubled haploid" was produced "from the F1 plants, selfing and using pedigree selection amongst the D1 lines, and selfing and bulking from the subsequent generations." Ex. 1001, 38:31–34. The inbred line is

"substantially homozygous." Ex. 1001, 38:35–36. A deposit "of at least 625 seeds of Maize Variety 1PFHC43" was made "with the Provasoli-Guillard National Center for Marine Algae and Microbiota (NCMA) . . . with NCMA Accession Number 202212064." Ex. 1001, 37:61–65.

The inbred maize variety 1PFHC43 "may be used as a male or female in the production of the first generation F1 hybrid" with demonstrated phenotypic "uniformity and stability within the limits of environmental influence for all the traits as described in the Variety Description Information" listed in Table 1. Ex. 1001, 15:3–8. According to the '020 patent, "[t]he variety has been self-pollinated and ear-rowed a sufficient number of generations with careful attention paid to uniformity of plant type to ensure sufficient homozygosity and phenotypic stability for use in commercial hybrid seed production." Ex. 1001, 15:8–12.

The '020 patent also discloses that "1PFHC43 is substantially homozygous. This homozygosity can be characterized at the loci shown in a marker profile. An F1 hybrid made with 1PFHC43 would substantially comprise the marker profile of 1PFHC43." Ex. 1001, 15:22–25. According to the '020 patent, "[m]aize variety 1PFHC43, being substantially homozy[]gous, can be reproduced by planting seeds of the variety, growing the resulting maize plants under self-pollinating or sib-pollinating conditions with adequate isolation, and harvesting the resulting seed using techniques familiar to the agricultural arts." Ex. 1001, 38:35–40.

D. Illustrative Claim

Independent claim 1 of the '020 patent is illustrative and is reproduced below.

> 1. A seed, plant, plant part, or plant cell of inbred maize variety 1PFHC43, representative seed of the variety having been deposited under NCMA accession number 202212064.

Ex. 1001, 40:27–29.

E. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1–20 of the '020 patent on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–20	103	Smalley[1], Plant Variety Protection Act (PVPA) certificate 201200313[2]
1–20	103	Longenberger[3]
1–20	103	Hoffbeck[4], PVPA certificate 200700315[5]
1–20	101	Lack of Utility
1–20	324(b)	Novel or unsettled legal question

Pet. 12–13. Petitioner also relies on the Declaration of Raymond D. Riley, Ph.D. (Ex. 1003) to support its assertions. Patent Owner relies on the Declarations of Patrick S. Schnable, Ph.D. (Ex. 2004) and Jason Wheeler (Ex. 2028).

F. Eligibility for Post-Grant Review

The AIA's post-grant review provisions apply to patents that "contain[] or contained at any time . . . a claim to a claimed invention that

[1] Smalley, US 8,759,636 B1, issued June 24, 2014 (Ex. 1005).
[2] Plant Variety Protection Certificate No. 201200313, Inbred Maize Variety PH1D84, filed May 11, 2012 (Ex. 1008).
[3] Longenberger, US 10,681,888 B1, issued June 16, 2020 (Ex. 1006).
[4] Hoffbeck et al., US 7,528,307 B1, issued May 5, 2009 (Ex. 1007).
[5] Plant Variety Protection Certificate No. 200700315, Inbred Maize Variety PHH5G, filed May 7, 2007 (Ex. 1010).

has an effective filing date . . . that is on or after [March 16, 2013]." Leahy-Smith America Invents Act (AIA) §§ 3(n)(1), 6(f)(2)(A) (2011). In addition, "[a] petition for a post-grant review may only be filed not later than the date that is 9 months after the date of the grant of the patent or of the issuance of a reissue patent (as the case may be)." 35 U.S.C. § 321(c) (2012); *see* 37 C.F.R. § 42.202(a) (2019).

Here, there is no dispute that the '020 patent is eligible for post-grant review. Petitioner filed the Petition within nine months of the '020 patent's issue date, and the effective filing date of the '020 patent is after March 16, 2013 (the effective date for the first inventor to file provisions of the Leahy-Smith America Invents Act). Ex. 1001, codes (22), (45) (showing an issue date of June 6, 2023); Pet. 12 (explaining that the '020 patent "does not assert an effective filing date earlier than the '059 Application's actual [July 2, 2021] filing date."); Paper 5 (according the Petition a filing date of March 6, 2024).

II. ANALYSIS

A. Person of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art "had a high level of skill, with a doctoral degree in plant breeding or a related field, at least five years of experience with corn breeding, and additional experience interfacing with laboratory-side personnel (including a computational biologist . . . along with genetics specialists) and field-side personnel." Pet. 15 (citing Ex. 1003 ¶¶ 19–21). Petitioner also states that, "[a]lternatively, additional experience could take the place of an advanced degree." Pet. 15. Patent Owner states that it "does not dispute Petitioner's definition of the qualifications of person of skill in the art," but "reserves its

right to challenge Petitioner's definition and to provide its own definition, should trial be instituted." Prelim. Resp. 25.

Petitioner's unopposed proposed definition is consistent with the cited prior art and the disclosure of the '020 patent, and we adopt it for purposes of this Decision. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (explaining that the prior art itself may "reflect[] an appropriate level" of ordinary skill in the art) (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985)).

B. Claim Construction

In this post-grant review, we construe the claims of the '020 patent "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b)." 37 C.F.R. § 42.200(b) (2019). Under that standard, the words of a claim are generally given their "ordinary and customary meaning," which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

Petitioner contends that "[b]ecause Petitioner's grounds plainly render the claims unpatentable under any plausible construction, no outer boundary constructions are necessary." Pet. 22. Patent Owner also does not construe any claim terms. *See generally* Prelim. Resp. For purposes of this Decision, and based on the record before us, we determine that none of the claim terms require an explicit construction to determine whether to institute post-grant review. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) ("[W]e need only construe terms 'that are in controversy, and only to the extent necessary to resolve the controversy.'"

(quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

C. Claims 1–20: Alleged Obviousness over Smalley (Ex. 1005) and PVPA certificate 201200313 (Ex. 1008)

Petitioner contends claims 1–20 are unpatentable as obvious in view of Smalley and PVPA certificate 201200313. *See* Pet. 41–53. Patent Owner opposes. Prelim. Resp. 33–57. After reviewing the parties' arguments and supporting evidence with respect to claims 1–20, we determine that Petitioner has not shown it is more likely than not that claims 1–20 would have been obvious in view of Smalley and PVPA certificate 201200313. We begin with a review of the relevant references and then address the parties' contentions.

1. Prior Art

a) Overview of Smalley (Ex. 1005)

Smalley, U.S. Patent No. 8,759,636 B1, is assigned to Pioneer Hi-Bred International, Inc. and titled "Maize Inbred PH1D84." Ex. 1005, codes (54), (73). Smalley describes that inbred maize variety PH1D84 was developed by crossing "inbred line PHCCW and inbred line PHE4N," selfing the resulting F1 plants and "using ear-to-row (pedigree) selection from the F3 to F9 generation, and bulking the F10 seed." Ex. 1005, 12:34–40. The inbred line is "substantially homozygous." Ex. 1005, 12:41. A deposit "of at least 2,500 seeds of Maize Variety PH1D84" was made "with the American Type Culture Collection (ATCC) . . . with ATCC Deposit No. PTA-121035." Ex. 1005, 41:31–35.

Smalley's Table 1 contains a description of some of the variety's phenotypic characteristics. Ex. 1005, cols. 34–36. Smalley's Table 2 contains a "general combining ability report" (Ex. 1005, 15:46, 35:49–

37:15), Table 3 "compare[s] a specific hybrid for which PH1D84 is a parent with other hybrids" (Ex. 1005, 15:61–16:4), and Table 4 contains a list of public molecular markers that can be used for the molecular maker profile of a maize variety (Ex. 1005, 31:30–34).

b) Overview of PVPA certificate 201200313 (Ex. 1008)

PVPA certificate 201200313 is the Plant Variety Protection Certificate for inbred maize variety PH1D84. Ex. 1008. PVPA certificate 201200313 describes that PH1D84 is "most similar" to, but "significantly different" from, its parent PHE4N. Ex. 1008, 5. PVPA certificate 201200313 discloses that inbred maize variety PH1D84 possesses "a greater average ear diameter," "a longer average kernel length," and "a shorter average plant height" than its parent PHE4N. Ex. 1008, 5.

2. Petitioner's Contentions

Petitioner contends that "Smalley and the corresponding PVPA Certificate disclose PH1D84—one of the two parent varieties of the 1PFHC43 variety claimed in the '020 Patent." Pet. 41. Petitioner further contends that "Smalley discloses that PH1D84 can be used 'to Develop another Ma[iz]e Plant' and in particular is a 'source of breeding material that may be used to develop new maize inbred varieties.'" Pet. 41 (quoting and citing Ex. 1005, 28:30–35). In addition, Petitioner contends that Smalley also "discloses specific cross breeding techniques for producing such 'new inbred' varieties." Pet. 41 (citing Ex. 1005, 2:43–49; Ex. 1003 ¶¶ 91–93).

Petitioner contends that PH1D84 had repeatedly been used as one parent for other maize varieties, and a person of ordinary skill in the art would have looked to use PH1D84 as a starting point to create other inbred lines because of a "desire to enhance commercial opportunities." Pet. 42 (quoting *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick*

Co., 464 F.3d 1356, 1368 (Fed. Cir. 2006)). Additionally, Petitioner contends a person of ordinary skill in the art would have had a reasonable expectation of success in using the parental line PH1D84 in arriving at other inbred lines. Pet. 42 (citing Ex. 1003 ¶ 84).

According to Petitioner, "1PFHC43's disclosed characteristics are highly similar to those in the PH1D84 parent, and nothing in the specification or otherwise in the intrinsic record suggests any property that [persons of ordinary skill in the art] would have viewed as surprising or unexpected over PH1D48." Pet. 42. Petitioner urges us to follow the reasoning set out in *Ex parte C*, where the Board affirmed an obviousness rejection, because "the record does 'not explain the significance of any differences in attributes between the novel variety and varieties that are old in the art.'" Pet. 42 (quoting *Ex parte C*, 27 USPQ2d 1492, 1493 (BPAI 1992)).

3. Patent Owner's Contentions

Patent Owner argues that Petitioner's obviousness arguments are deficient because Petitioner fails to assess what is actually claimed. Prelim. Resp. 33–34. Patent Owner emphasizes that the claims of the '020 patent are directed to "inbred maize variety 1PFHC43, representative seed of the variety having been deposited under NCMA accession number 202212064." Prelim. Resp. 38; *see e.g.*, Ex. 1001, Claim 1. According to Patent Owner, however, Petitioner's obviousness arguments are directed to whether "it would have been obvious to make ***a hypothetical maize inbred*** with similar phenotypical characteristics to those described in Table 1 of the '020 Patent" instead of "whether it would have been obvious to obtain ***the maize inbred variety 1PFHC43*** based on the asserted prior art." Prelim. Resp. 38–39.

Patent Owner also contends that the seed deposit not only describes the phenotype but also the genotype of the claimed inbred maize. Prelim. Resp. 41–42. Patent Owner argues that "Petitioner ignores the full scope of the Challenged Claims by not accounting for 1PFHC43's unique genetic composition and its obviousness analysis necessarily fails as a result." Prelim. Resp. 42; *see also* Prelim. Resp. 45 (noting that "Petitioner, in challenging the validity of the patent, could have performed a genetic analysis comparing 1PFHC43's genome to those of the asserted prior art varieties to truly understand the differences between them and whether it was even possible for a [person of ordinary skill in the art] to modify those references to arrive at 1PFHC43."). Patent Owner contends that "Petitioner relies strictly on phenotypic characteristics in determining PH1D48 renders 1PFHC43 obvious and relies purely on hindsight to do so." Prelim. Resp. 53. Patent Owner also asserts that "a direct comparison of PH1D84 and the phenotypes listed in Table 1 of the '020 patent show substantial differences." Prelim. Resp. 53–54 (citing Ex. 2004 ¶ 127).

According to Patent Owner, "1PFHC43 genetic and phenotypic characteristics are a combination of those of both its parents' (PH1VNA and PH1D84) genome and phenotype." Prelim Resp. 48 (citing Ex. 2004 ¶ 115). Patent Owner notes that "[a]s explained during examination, PH1VNA is not prior art because it was a proprietary inbred line and not publicly available at the relevant time." Prelim. Resp. 49. Patent Owner thus contends that because "one of the claimed variety's parents, was not known in the art at the relevant time," a person of ordinary skill in the art would not have had a reason to, and would not have had a reasonable expectation of success in developing 1PFHC43 based on Smalley's disclosure alone. Prelim. Resp. 47–48, 52.

Patent Owner contends that even if PH1VNA were known in the art, "[a] cross between PH1VNA and PH1D84 results in a genetically identical F1 hybrid population, in terms of its genetic content (50% from each parent). However, because they are heterozygous, progeny plants from the subsequent generations required to generate a new inbred variety are expected to be different both genotypically and phenotypically." Prelim Resp. 55 (citing Ex. 2004 ¶ 25). In other words, "progeny plants represent innumerable numbers of recombinations and rearrangements of the parent genomes." Prelim. Resp. 55.

Dr. Schnable, Patent Owner's Declarant, explains that the calculated difference in genotype between 1PFHC43 (child) and PH1D84 (parent), is "approximately 11% of genotyped genetic markers (i.e., sharing only 89% of the 2,990 markers genotyped and homozygous for both inbred varieties). This level of genetic differentiation is not surprising given the differences in pedigrees. Additional genotyping would be expected to uncover additional genetic differences." Ex. 2004 ¶ 138 (citing Ex. 2028).

4. Analysis

Based upon our review of the arguments and evidence, we determine that Petitioner has not shown it is more likely than not that that the challenged claims would have been obvious over the cited references.

a) Claim 1

Claim 1 recites "[a] seed, plant, plant part, or plant cell of inbred maize variety 1PFHC43, representative seed of the variety having been deposited under NCMA accession number 202212064." Ex. 1001, 40:27–29. When claims are directed to biological material and words alone cannot sufficiently describe the invention, our rules allow for such biological

material to be deposited. 37 C.F.R. 1.801–1.809; *see also* MPEP 2402–2410.

> The '020 patent provides:
>
> > Applicant has made a deposit of at least 625 seeds of Maize Variety 1PFHC43 with the Provasoli-Guillard National Center for Marine Algae and Micro biota (NCMA) . . . . Upon issuance of any claims in the application, the Applicant will make the deposit available to the public pursuant to 37 C.F.R. § 1.808. This deposit of the Maize Variety 1PFHC43 will be maintained in the NCMA depository, which is a public depository, for a period of 30 years, or 5 years after the most recent request, or for the enforceable life of the patent, whichever is longer, and will be replaced if it becomes nonviable during that period.

Ex. 1001, 37:61–38:13.

By depositing the seeds, Patent Owner is making the genetic sequence (genotype) of 1PFHC43 maize variety available. As Patent Owner notes,

> 1PFHC43's genetic make-up is described in the specification via the seed deposit. *See, e.g.*, *Enzo Biochem, Inc. v. Gen-Prove Inc.*, 323 F.3d 956, 965 (Fed. Cir. 2002) ("[R]eference in the specification to a deposit in a public depository, which makes its contents accessible to the public when it is not otherwise available in written form, constitutes an adequate description of the deposited material sufficient to comply with the written description requirement of § 112 ¶1."); *see also Monsanto Co. v. Scruggs*, 459 F.3d 1328, 1336 (Fed. Cir. 2006) (failure to disclose a specific DNA sequence for genus claim did not render claim invalid where POSA could determine the DNA sequence based on the identification of the genus and publicly available biological deposits referenced in the patent specification).

Prelim Resp. 41–42. Thus, claim 1, which is directed to inbred maize variety 1PFHC43 as described by the exemplary seed "deposited under NCMA accession number 202212064," encompasses both the genotype and phenotype associated with that particular seed.

Patent Owner is correct that Petitioner focuses its obviousness challenge on 1PFHC43's phenotype, and does not address its genotype. Prelim. Resp. 42; *see* Pet. 26–31 (comparing 1PFHC43's phenotype with the phenotypes of the asserted prior art). Petitioner does not direct us to, nor do we discern, any information in the Petition or Reply regarding 1PFHC43's genotype that supports Petitioner's arguments regarding obviousness.[6] To the contrary, Patent Owner and Dr. Schnable present evidence suggesting genotypic differences between IPFHC43 and the asserted prior art. Prelim. Resp. 43; Ex. 2004 ¶¶ 138, 144, 151. This information, coupled with Petitioner's lack of evidence in the prior art regarding 1PFHC43's genotype, undermines Petitioner's obviousness challenge.

Petitioner's failure to address 1PFHC43's genotype is problematic for additional reasons. For example, we agree with Patent Owner that Petitioner fails to demonstrate sufficiently that a person of ordinary skill in the art would have had a reasonable expectation of success in arriving at 1PFHC43 based on Smalley's disclosure alone. Prelim. Resp. 52. According to the '020 patent specification, the claimed 1PFHC43 inbred maize variety is a

[6] In its Reply, Petitioner argues that requiring an analysis of the claimed variety's genome violates the holding in *KSR Int'l Co. v. Teleflex*, 550 U.S. 398 (2007), requiring flexibility in an obviousness analysis, and the holding in *LKQ Corporation v. GM Global Tech. Ops. LLC*, 102 F.4th 1280 (Fed. Cir. 2024) (en banc), which overturned a Board decision applying an overly rigid test for obviousness in the context of design patent applications. Reply 7–8. Petitioner's arguments are not persuasive. First, to the extent Petitioner is arguing that the holding in *LKQ* somehow applies here, we disagree, as *LKQ* was a case directed to design patent applications, not utility patents directed to plant varieties. Second, although *KSR* does address flexibility in an obviousness analysis, it does not permit obviousness challenges that avoid addressing the claim elements.

cross between inbred line PH1VNA and inbred line PH1D84. Ex. 1001, 38:25–28. In the simplest terms, PH1VNA and PH1D84 are the parents, and their cross ultimately resulted in the inbred variety 1PFHC43. The '020 patent explains that after the initial crossing of the parental lines, the selection of the progeny was based on genetic analysis predicting disease, insect, and agronomic phenotypic performance. Ex. 1001, 38:28–30. "Inbred 1PFHC43 was developed by producing a doubled haploid from the Fl plants, selfing and using pedigree selection amongst the D1 lines, and selfing and bulking from the subsequent generations." Ex. 1001, 38:30–34.

Smalley explains that "[a]n important consequence of the homozygosity and homogeneity of the inbred variety is that the hybrid between a defined pair of inbreds may be reproduced indefinitely as long as the homogeneity of the inbred parents is maintained." Ex. 1005, 15:9–13. According to Smalley, the inbred maize variety "PH1D84 may be used to produce hybrid maize. One such embodiment is the method of crossing maize variety PH1D84 with another maize plant, such as a different maize variety, to form a first generation F1 hybrid seed." Ex. 1005, 14:51–54. "Maize varieties such as PH1D84 are typically developed for use in the production of hybrid maize varieties. However, varieties such as PH1D84 also provide a source of breeding material that may be used to develop new maize inbred varieties." Ex. 1005, 28:31–35.

Based on these disclosures in Smalley, we agree with Petitioner that a person of ordinary skill in the art would have understood that the parental line PH1D84 could have been used as a starting point to arrive at other inbred lines. *See* Pet. 41. Petitioner, however, fails to demonstrate sufficiently how or why a person of ordinary skill in the art would have had a reasonable expectation of success in developing 1PFHC43 specifically,

when its other parent was not known in the art at the relevant time. As Dr. Schnable explains, 1PFHC43's genome is derived from its parents. Ex. 2004 ¶ 115. Petitioner does not address how a person of ordinary skill in the art would have been able to produce the claimed seed, including its unique genotype, without having access to PH1VNA or its genomic and phenotypic information.

Furthermore, Patent Owner offers information suggesting that "the breeding of IPFHC43 would have been unpredictable even if PH1VNA were known in the art." Prelim. Resp. 55. Dr. Schnable addresses unpredictability in the breeding process, stating:

> [e]ach progeny of an F1 plant resulting from a cross of two inbreds is genetically and phenotypically distinct. A [person of ordinary skill in the art] would not expect that a cross of the same parents will produce the same child. The genome of a progeny plant is the result of the random recombination in the F1 plant of the two parental genomes and the chance of the exact same child resulting from that cross is infinitesimally small.

Ex. 2004 ¶ 116. This information further undermines Petitioner's arguments regarding an expectation of success in achieving the claimed invention, especially considering Petitioner's arguments are based on a person of ordinary skill in the art only having information about one parent.

Petitioner urges us to follow *Ex parte C*, 27 USPQ2d 1492 (BPAI 1992). Pet. 42. We decline. We are not persuaded by Petitioner's arguments and agree with Patent Owner that *Ex parte C* can be distinguished from the facts in the present case. *See* Prelim Resp. 28–29; Sur-Reply 7–8. For example, "the claims [in *Ex parte C*] were rejected as obvious during prosecution" where both parental seed lines were known in the prior art. Sur-Reply 7; *see Ex. Parte C*, 27 U.S.P.Q.2d at 1492 (The new variety "was developed by appellant and is a cross between a commercial soybean known

as X and a known variety available from Iowa State University and identified in the specification as 'Pella'"). In addition, the examiner in *Ex. Parte C* explained that making the cross between the known plants would have provided resistance to root rot to the resultant plant, which would be a reason one of ordinary skill in the art would have desired to make the cross. *Ex. Parte C*, 27 USPQ2d at 1492 (stating "it is well known to breed root rot resistance into a plant by crossing the plant with other varieties having resistance to root rot."). In contrast, Petitioner has only identified one parent — PH1D84 — and has not articulated a similarly specific reason why one of ordinary skill in the art would cross PH1D84 with another known inbred maize line in order to arrive at the genotype of 1PFHC43.

For all of the foregoing reasons, we determine Petitioner has not shown that it is more likely than not that claim 1 would have been obvious over the cited references.

b) Claim 2–20

Petitioner contends claims 2–20 are unpatentable as obvious in view of Smalley and PVPA certificate 201300313. Pet. 45–53.

Claims 2–9 depend from claim 1. Ex. 1001, 40:40–60. Nothing in Petitioner's analysis of these claims cures the deficiencies discussed above regarding Petitioner's analysis of claim 1. Therefore, for the same reasons discussed above for independent claim 1, we determine Petitioner has failed to show that it is more likely than not that claims 2–9 would have been obvious in view of Smalley and PVPA certificate 201300313.

Claim 10 is an independent claim, reciting "[a] converted seed, plant, plant part or plant cell of inbred maize variety 1PFHC43" with "fewer than six locus conversions" such that the plant or plant grown from such seed

> comprises the physiological and morphological characteristics of maize variety 1PFHC43 when grown under the same environmental conditions, and further wherein the fewer than six locus conversion confer a property selected from the group consisting of male sterility, a site for site-specific recombination, abiotic stress tolerance, altered phosphate, altered antioxidants, altered fatty acid, altered essential amino acids, altered carbohydrates, herbicide tolerance, insect resistance and disease resistance.

Ex. 1001, 40:61–41:10. Claims 11–17 depend from claim 10.

Petitioner contends that claim 10 would have been obvious "for the same reasons as claim 1 (concerning variety 1PFHC43)" and because a person of ordinary skill in the art would have known that "locus conversions such as those recited in claim 10 were a routine technique to incorporate desirable traits into inbred maize lines." Pet. 50. Nothing in Petitioner's analysis of claims 10–17, however, cures the deficiencies discussed above regarding Petitioner's analysis of claim 1. Therefore, for the same reasons discussed above for independent claim 1, we determine Petitioner has failed to show that it is more likely than not that claims 10–17 would have been obvious in view of Smalley and PVPA certificate 201300313.

Claim 18 is an independent claim that recites "an F1 hybrid seed produced by crossing a plant or plant part of 1PFHC43 . . . with a different maize plant," and also requires that "1PFHC43 further comprises a transgene and otherwise comprises all of the physiological and morphological characteristics of maize variety 1PFHC43 when grown under the same environmental conditions, wherein the transgene is inherited by the F1 hybrid seed;" and the transgene be incorporated by "backcrossing or genetic transformation." Ex. 1001, 42:8–19. Claims 19 and 20 depend from claim 18.

Petitioner contends claim 18 would have been obvious for the same reasons as claim 10. Pet. 52. Nothing in Petitioner's analysis of claim 18, however, cures the deficiencies discussed above regarding Petitioner's analysis of claim 1 or 10. Therefore, for the same reasons discussed above for independent claims 1 and 10, we determine Petitioner has failed to show that it is more likely than not that claims 18–20 would have been obvious in view of Smalley and PVPA certificate 201300313.

5. Summary

In sum, we determine that Petitioner has not shown it is more likely than not that claims 1–20 would have been obvious over the combination of Smalley and PVPA certificate 201300313.

D. Claims 1–20: Alleged Obviousness over Longenberger (Ex. 1006)

Petitioner contends claims 1–20 are unpatentable as obvious in view of Longenberger. Pet. 53–60. Patent Owner opposes. Prelim. Resp. 33–51, 58–61. After reviewing the parties' arguments and supporting evidence with respect to claims 1–20, we determine that Petitioner has not shown it is more likely than not that claims 1–20 would have been obvious in view of Longenberger. We begin with a review of the relevant reference and then address the parties' contentions.

1. Prior Art

a) Overview of Longenberger (Ex. 1006)

Longenberger, U.S. Patent No. 10,681,888 B1, is assigned to Pioneer Hi-Bred International, Inc. and titled "Inbred Maize Variety PH47K2." Ex. 1006, codes (54), (73). Longenberger describes that inbred maize variety PH18KJ was developed by crossing PH1D84 and PH12K5. Ex. 1006, 38:56–57. Longenberger describes that "a doubled haploid" was

produced "from the F1 plants, selfing and using pedigree selection amongst the D1 lines, and selfing and bulking from the subsequent generations." Ex. 1006, 38:58–61. The inbred line is "substantially homozygous." Ex. 1006, 38:62. A deposit "of at least 625 seeds of Maize Variety PH47K2" was made "with the American Type Culture Collection (ATCC) . . . with ATCC Deposit No. PTA-126525." Ex. 1006, 38:29–33.

Longenberger's Table 1 contains a description of some of the variety's phenotypic characteristics. Ex. 1006, 39:1–41:9.

2. Petitioner's Contentions

Petitioner contends that "Longenberger discloses PH47K2—a prior art inbred variety with properties very similar to those of the 1PFHC43" variety claimed in the '020 patent. Pet. 53. Petitioner asserts that Longenberger's variety is a sibling of 1PFHC43 because they each share PH1D84 as a parent. Pet. 54. Petitioner contends that "Longenberger discloses that PH47K2 maize hybrid can be used '[t]o Develop Another Maize Plant' and in particular is a 'source of breeding material that may be used to develop new maize inbred varieties.'" Pet. 54 (quoting Ex. 1006, 32:38–43). According to Petitioner, "1PFHC43's disclosed characteristics are highly similar to PH47K2's as disclosed in Longenberger." Pet. 55. Petitioner also raises arguments similar to those discussed above in connection with its challenge based on Smalley. Pet. 55–56 (referring to a reasonable expectation of obtaining an inbred maize variety with PH47K2 as a parent and comparing the present facts to those in *Ex parte C*).

3. Patent Owner's Contentions

Patent Owner contends that Petitioner relies on the same flawed arguments here as it did for its challenge based on Smalley. Prelim. Resp. 58. Patent Owner contends that Petitioner's arguments are directed to

"obtaining ***an inbred maize variety*** with PH47K2 as a parent" instead of whether a person of ordinary skill in the art would and could "modify PH47K2 to create 1PFHC43," specifically. Prelim. Resp. 58 (quoting Pet. 55). Patent Owner also contends that a person of ordinary skill in the art "would have no reasonable expectation of success in creating 1PFHC43 using only PH47K2 as a 'starting point' and would understand PH47K2 alone could not be modified to create 1PFHC43." Prelim. Resp. 59 (citing Ex. 2004 ¶ 146). Patent Owner also points to Petitioner's failure to conduct a genotype analysis, and Dr. Schnable's testimony that 1PFHC43 and PH47K2 differ at about 12% of genotyped genetic markers and are "very different" genotypically. Pet. 60–61 (quoting Ex. 2004 ¶ 144).

4. Analysis

Based upon our review of the arguments and evidence, we determine that Petitioner has not shown it is more likely than not that that the challenged claims would have been obvious over the cited references.

a) Claim 1

As discussed above (II.C.4.a), claim 1, which is directed to inbred maize variety 1PFHC43 as described by the exemplary seed "deposited under NCMA accession number 202212064," encompasses both the genotype and phenotype associated with that particular seed. Petitioner, however, again focuses its obviousness challenge on 1PFHC43's phenotype, and does not address its genotype. *See* Pet. 54–55 (asserting that 1PFHC43's disclosed characteristics are highly similar to PH47K2's as disclosed in Longenberger). Petitioner does not direct us to, nor do we discern, any information in the Petition or Reply regarding 1PFHC43's genotype that supports Petitioner's arguments regarding obviousness. To the contrary, Patent Owner and Dr. Schnable present evidence suggesting

genotypic differences between IPFHC43 and the asserted prior art. Prelim. Resp. 60–63; Ex. 2004 ¶ 144. This information, coupled with Petitioner's lack of information regarding 1PFHC43's genotype, undermines Petitioner's obviousness challenge.

Petitioner's failure to address 1PFHC43's genotype is problematic for additional reasons. For example, Petitioner fails to demonstrate sufficiently that a person of ordinary skill in the art would have had a reasonable expectation of success in developing 1PFHC43 based on Longenberger's disclosure alone. Although we agree with Petitioner that a person of ordinary skill in the art would have understood, based on disclosures in Longenberger, that the parental line PH47K2 could have been used as a starting point to arrive at other inbred lines, Petitioner fails to demonstrate sufficiently how or why a person of ordinary skill in the art would have had a reasonable expectation of success in developing 1PFHC43 specifically.

Furthermore, PH47K2 is not a parent of 1PFHC43. As Dr. Schnable explains, 1PFHC43's genome is derived from its parents (Ex. 2004 ¶ 115), and Petitioner does not address sufficiently how a person of ordinary skill in the art would have been able to produce the claimed seed, including its unique genotype, from varieties other than PH1VNA and PH1D84.

Additionally, for reasons similar to those discussed above (II.C.4.a), we again determine the facts in *Ex parte C* are distinguishable from the facts in the present proceeding.

For all of the foregoing reasons, we determine Petitioner has not shown it is more likely than not that claim 1 would have been obvious over Longenberger.

b) Claim 2–20

Petitioner contends claims 2–20 are unpatentable as obvious in view of Longenberger for the same reasons it presents for claim 1, and for the reasons it presented in its challenge based on Smalley. Pet. 56. Petitioner also contends that Longenberger contains additional disclosures relevant to the limitations in claims 2–20. Pet. 56–60.

We have reviewed Petitioner's arguments and information regarding claims 2–20. Nothing in Petitioner's analysis of these claims cures the deficiencies discussed above regarding Petitioner's analysis of claim 1. Therefore, for the same reasons discussed above for independent claim 1, we determine Petitioner has failed to show it is more likely than not that claims 2–20 would have been obvious in view of Longenberger.

5. Summary

In sum, we determine that Petitioner has not shown it is more likely than not that claims 1–20 would have been obvious over Longenberger.

E. Claims 1–20: Alleged Obviousness over Hoffbeck (Ex. 1007) and PVPA certificate 200700315

Petitioner contends claims 1–20 are unpatentable as obvious in view of Hoffbeck and PVPA certificate 200700315. Pet. 60–66. Patent Owner opposes. Prelim. Resp. 33–51, 61–63. After reviewing the parties' arguments and supporting evidence with respect to claims 1–20, we determine that Petitioner has not shown it is more likely than not that claims 1–20 would have been obvious in view of the cited references. We begin with a review of the relevant references and then address the parties' contentions.

1. Prior Art

a) Overview of Hoffbeck (Ex. 1007)

Hoffbeck, U.S. Patent No. 7,528,307 B1, is assigned to Pioneer Hi-Bred International, Inc. and titled "Inbred Maize Variety PHH5G." Ex. 1007, codes (54), (73). Hoffbeck describes that inbred maize variety PHH5G is "substantially homozygous." Ex. 1007, 12:65–13:3. A deposit "of at least 2,500 seeds of Maize Variety PHH5G" was made "with the American Type Culture Collection (ATCC) . . . with ATCC Deposit No. PTA-9710." Ex. 1007, 37:20–26.

Hoffbeck's Table 1 contains a description of some of the variety's phenotypic characteristics. Ex. 1007, 37:51–40:26. Table 2 shows the "SSR genetic marker profile" for PHH5G. Ex. 1007, 14:52–56. Hoffbeck's Tables 3A–3D show comparisons between PHH5G and "other maize inbred varieties and hybrids." Ex. 1007, 15:39–62. Table 4 of Hoffbeck shows the general combining ability of PHH5G. Ex. 1007, 16:50–17:8. Hoffbeck's Table 5 "compare[s] a specific hybrid for which inbred PHH5G is a parent with other hybrids." Ex. 1007, 17:16–19. Table 6 of Hoffbeck shows the "numerous species of the genus F1 hybrids created with PHH5G." Ex. 1007, 17:19–21.

b) Overview of PVPA certificate 200700315 (Ex. 1010)

PVPA certificate 200700315 is the Plant Variety Protection Certificate for inbred maize variety PHH5G. Ex. 1010. PVPA certificate 200700315 describes that inbred maize variety PHH5G originated from a cross between PH6WA and PH4GP. Ex. 1010, 3. PHH5G "mostly resembles" inbred line PH4GP. Ex. 1010, 5. PVPA certificate 200700315 discloses that inbred maize variety PHH5G possesses "a greater ear

diameter," "more kernel rows per ear," "greater ear weight," and "a shorter shank length" than inbred line PH4GP. Ex. 1010, 3.

2. Petitioner's Contentions

Petitioner's arguments for its challenge based on Hoffbeck are nearly identical to those presented for its challenge based on Longenberger. *Compare* Pet. 53–60 *with* Pet. 60–66. For example, Petitioner argues that "Hoffbeck discloses PHH5G—a prior art inbred variety with properties very similar to those of the 1PFHC43 variety claimed in the '020 Patent," and "Hoffbeck discloses that PHH5G can be used 'to Develop Another Maize Plant' and in particular is a 'source of breeding material that may be used to develop new maize inbred varieties.'" Pet. 60–61 (quoting Ex. 1007, 30:29–35). Petitioner also argues that a person of ordinary skill in the art "would have had reason to use PHH5G as the starting point to create other inbred lines." Pet. 61.

3. Patent Owner's Contentions

Patent Owner argues that Petitioner relies on the same flawed arguments it presented in its other challenges, and Patent Owner presents the same arguments again in response. Prelim. Resp. 61–63. In particular, Patent Owner asserts that Petitioner ignores the genotypes of PHH5G and 1PFHC43 in its arguments. Prelim. Resp. 62. Patent Owner also points to Dr. Schnable's testimony that 1PFHC43 and PHH5G differ at about 12% of genotyped genetic markers and are "very different" genotypically. Pet. 62–63 (quoting Ex. 2004 ¶ 151).

4. Analysis

Based upon our review of the arguments and evidence, we determine that Petitioner has not shown it is more likely than not that that the challenged claims would have been obvious over the cited references.

a) Claim 1

As discussed above (II.C.4.a), claim 1, which is directed to inbred maize variety 1PFHC43 as described by the exemplary seed "deposited under NCMA accession number 202212064," encompasses both the genotype and phenotype associated with that particular seed. Petitioner, however, again focuses its obviousness challenge on 1PFHC43's phenotype, and does not address its genotype. *See* Pet. 60–61 (asserting that 1PFHC43's disclosed characteristics are highly similar to PHH5G's as disclosed in Hoffbeck). Petitioner does not direct us to, nor do we discern, any information in the Petition or Reply regarding 1PFHC43's genotype that supports Petitioner's arguments regarding obviousness. To the contrary, Patent Owner and Dr. Schnable present evidence suggesting genotypic differences between IPFHC43 and the asserted prior art. Prelim. Resp. 62–63; Ex. 2004 ¶ 151. This information, coupled with Petitioner's lack of information regarding 1PFHC43's genotype, undermines Petitioner's obviousness challenge.

Petitioner's failure to address 1PFHC43's genotype is problematic for additional reasons. For example, Petitioner fails to demonstrate sufficiently that a person of ordinary skill in the art would have had a reasonable expectation of success in developing 1PFHC43 based on Hoffbeck's disclosures alone. Although we agree with Petitioner that a person of ordinary skill in the art would have understood, based on disclosures in Hoffbeck, that the line PHH5G could have been used as a starting point to arrive at other inbred lines, Petitioner fails to demonstrate sufficiently how or why a person of ordinary skill in the art would have had a reasonable expectation of success in developing 1PFHC43 specifically.

Additionally, PHH5G is not a parent of 1PFHC43. As Dr. Schnable explains, 1PFHC43's genome is derived from its parents (Ex. 2004 ¶ 115), and Petitioner does not address how a person of ordinary skill in the art would have been able to produce the claimed seed, including its unique genotype, from varieties other than PH1VNA and PH1D84.

Additionally, for reasons similar to those discussed above (II.C.4.a), we again determine the facts in *Ex parte C* are distinguishable from the facts in the present proceeding.

For all of the foregoing reasons, we determine Petitioner has not shown it is more likely than not that claim 1 would have been obvious over Hoffbeck and PVPA certificate 200700315.

b) Claim 2–20

Petitioner contends claims 2–20 are unpatentable as obvious in view of Hoffbeck for the same reasons it presents for claim 1, and for the reasons it presented in its challenge based on Smalley. Pet. 63. Petitioner also contends that Hoffbeck contains additional disclosures relevant to the limitations in claims 2–20. Pet. 63–66.

We have reviewed Petitioner's arguments and information regarding claims 2–20. Nothing in Petitioner's analysis of these claims cures the deficiencies discussed above regarding Petitioner's analysis of claim 1. Therefore, for the same reasons discussed above for independent claim 1, we determine Petitioner has failed to show that it is more likely than not that claims 2–20 would have been obvious in view of Hoffbeck and PVPA certificate 200700315.

5. Summary

In sum, we determine that Petitioner has not shown it is more likely than not that claims 1–20 would have been obvious over Hoffbeck and PVPA certificate 200700315. *See* Pet. 63–66.

F. Claims 1–20: Alleged Lack of Utility under 35 U.S.C. § 101

Petitioner contends that claims 1–20 of the '020 patent are unpatentable because "the claimed invention 'lacks a specific and substantial utility' as required by §101." Pet. 67. According to Petitioner, "[n]othing in the specification of ***this particular patent*** establishes that claims 1–20 are a 'useful improvement' over earlier corn varieties." Pet. 67; *see also* Pet. 69 ("Nothing in the record suggest any utility specific to the 1PFHC43 variety itself beyond that generic to any species of corn."). Petitioner also argues that nothing in the '020 patent suggests any reason why the claimed variety has "markedly different characteristics" and "corresponding 'significant utility'" as compared to naturally occurring, preexisting corn varieties. Pet. 70–71 (quoting *Diamond v. Chakrabarty*, 447 U.S. 303, 310 (1980)*; In re Roslin Institute (Edinburgh)*, 750 F.3d 1333, 1336 (Fed. Cir. 2014)).

Patent Owner disputes Petitioner's contentions, arguing that Petitioner "invites the Board to create a new utility standard exclusive to plant utility patents," and also "conflates the law of patent eligibility with the law of utility." Prelim. Resp. 63–73. According to Patent Owner, "[u]nder the proper test, the '020 patent easily meets the utility requirement." Prelim. Resp. 63.

After considering the parties' arguments and information presented at this stage of the proceeding, we agree with Patent Owner that the '020 patent satisfies the utility requirement of 35 U.S.C. § 101.

Under § 101, "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor." 35 U.S.C. § 101. Thus, contrary to Petitioner's argument, compliance with the utility requirement of § 101 does not require showing a "useful improvement" over existing subject matter. Rather, as the Federal Circuit explained, "a patent has utility if the alleged invention is capable of providing some identifiable benefit presently available to the public." *Grunenthal GMBH v. Alkem Lab'ys Ltd*., 919 F.3d 1333, 1345 (Fed. Cir. 2019). Additionally, the court explained that "[a] patent fails to satisfy the utility requirement under 35 U.S.C. § 101 only if the invention is 'totally incapable of achieving a useful result.'" *Id*.

The '020 patent lists several uses for the claimed subject matter sufficient to satisfy the utility requirement of Section 101. For example, the '020 patent contains a section titled "INDUSTRIAL APPLICABILITY," which states:

> Examples of maize grain or plant material as a commodity plant product include, but are not limited to oils, meals, flour, starches, syrups, proteins, cellulose, silage, and sugars. Maize grain is used as human food, livestock feed, and as raw material in industry. The food uses of maize, in addition to human consumption of maize kernels, include both products of dry-and wet-milling industries. The principal products of maize dry milling are grits, meal and flour. The maize wet-milling industry can provide maize starch, maize syrups, and dextrose for food use.

Ex. 1001, 36:50–64.

These recitations constitute "identifiable benefit[s] presently available to the public," sufficient to satisfy the utility requirement of § 101. *Grunenthal*, 919 F.3d at 1345. They also distinguish the facts here from

those in the cases, such as *In re Fisher*, 421 F.3d 1365, 1371 (Fed. Cir. 2005), Petitioner relies upon to support its contentions. *See* Pet. 67–69. For example, in *Fisher* the Federal Circuit determined that the asserted uses of the claimed invention were "merely hypothetical possibilities," and there was no evidence of actual use in the real world. *Fisher,* 421 F.3d at 1373. The court also determined that the claimed invention was "not an end of [the inventor's] research effort, but only [a] tool[] to be used along the way in the search for a practical utility. *Id*. at 1377.

Here, in contrast, the '020 patent identifies specific, real-world uses for the claimed invention. Thus, unlike the patent in *Fisher*, the '020 patent disclosure demonstrates that its invention "has a significant and presently available benefit to the public" and discloses "a use which is not so vague as to be meaningless." *Id*. at 1371. Thus, the '020 patent discloses, respectively, both a "substantial and specific utility" to satisfy § 101. *Id*.; *see* Pet. 68–70 (arguing, in view of *Fisher*, that § 101 compliance requires showing a "substantial" utility and "specific" benefit).

We turn next to Petitioner's argument that claims 1–20 lack "substantial utility" because nothing in the '020 patent suggests any reason why the claimed variety has "markedly different characteristics" as compared to naturally occurring, preexisting corn varieties. Pet. 70–71. We agree with Patent Owner that this argument conflates the issue of patent eligible subject matter with the utility requirement under § 101. Prelim. Resp. 71–72.

The language Petitioner relies upon comes from the Supreme Court decision in *Diamond v. Chakrabarty*, where the Court addressed the question of whether living organisms constitute a "manufacture" or "composition of matter" under § 101. *Chakrabarty*, 447 U.S. at 307. There,

the Court determined that living organisms can constitute patentable subject matter if they have "markedly different characteristics from any found in nature." *Id*. at 310. Petitioner has not directed us to persuasive evidence or authority demonstrating that the holding in *Chakrabarty* applies to the question of whether the claimed variety satisfies the utility requirement of § 101. To the contrary, the two cases Petitioner cites in the Petition, *In re Roslin Institute (Edinburgh)*, 750 F.3d 1333, 1336 (Fed. Cir. 2014) and *Ex parte Uchiyama*, Appeal No. 2017-005387, 2018 WL 1378136, at *4 (PTAB Mar. 12, 2018), addressed rejections under § 101 regarding patentable subject matter, not utility.

For all of the above reasons, we find that Petitioner has not shown that it is more likely than not that the challenged claims are unpatentable for failing to satisfy the utility requirement of § 101.

G. Institution of Post-Grant Review under § 324(b)

Petitioner contends that "institution can and should be granted under §324(b) for the separate and independent reason that the petition raises a 'novel or unsettled legal question.'" Pet. 13. According to Petitioner, the legal question is:

> If a patent examiner invokes [37 C.F.R. § 1.105] to secure information "reasonably necessary to properly examine" a patent application, does the burden of production shift to the patent applicant such that the refusal to provide the requested information on the sole basis that it is "secret" or "proprietary" precludes further examination under any of the statutory requirements outstanding at the time of the request?

Pet. 13, 72–88. Petitioner contends that "[t]he Office can and should answer this question affirmatively." Pet. 73.

Petitioner asserts that this question stems from the Examiner's request for Information under Rule 105[7] concerning the PH1VNA parental variety, and Patent Owner's "refusal to provide a substantive response on the ground that the PH1VNA variety was 'proprietary' and had 'not been made publicly available.'" Pet. 72–73. Petitioner contends that propriety information can be "highly relevant" when determining whether patent claims satisfy the requirements for patentability under §§ 101, 102, 103, and 112. Pet. 74, 77–83. Petitioner further contends that Rule 105 is important for "enhancing patent examination quality." Pet. 76.

Patent Owner disputes Petitioner's contentions, arguing that Petitioner's question is based on a false and misleading characterization of the prosecution history of the '020 patent. Prelim. Resp. 74. Patent Owner also contends that Petitioner's "question represents—at best—a matter of ***patent examination process or policy*** not within the proper scope of post-grant review under the AIA." Prelim. Resp. 74.

We agree with Patent Owner.

By Petitioner's own admission, its novel question stems from Patent Owner's alleged refusal to provide a response to the Examiner's Request for Information under Rule 105. Pet. 72–73; *see also* Pet. 77 (Petitioner referring to Patent Owner's "refusal to provide information" during examination); Reply 1 (Petitioner asserting Patent Owner "deliberately ***with[eld]*** information" during examination). Our review of the record, however, does not support Petitioner's characterization of Patent Owner's conduct during examination. Instead, the file history of the '020 patent

[7] We follow the parties' convention of referring to 37 C.F.R. § 1.105 as "Rule 105." *See, e.g.*, Pet. 73; Prelim. Resp. 74.

shows that the Examiner issued a "Request for Information under 37 C.F.R. § 1.105," which sought, *inter alia*, "information pertaining to the public availability of the original parental lines" of the claimed variety. Ex. 1002, 106. Patent Owner responded to the request by stating that "Parental line PH1VNA has not been made publicly available. Parental line PH1D84 was patented as Maize Inbred PH1D84 in U.S. Patent No. 8,759,636." Ex. 1002, 351. After receiving this information, the Examiner issued a Notice of Allowance. Ex. 1002, 360–364.

The record therefore shows Patent Owner answered the questions in the Request for Information, and the Examiner accepted those answers. Ex. 1003, 351, 360–364. We do not discern any evidence in the record demonstrating that the Examiner asked Patent Owner to produce proprietary information, or that Patent Owner refused to produce it. Accordingly, we are not persuaded that the present record contains adequate support to form the basis for Petitioner's purported novel or unsettled legal question.

Even if the record did contain such support, we agree with Patent Owner that Petitioner's question represents a matter of patent examination process or policy. Prelim. Resp. 80–81. On its face, the question refers to potential actions taken by an examiner and patent applicant during examination of a patent application, and the possible repercussions of such actions during the examination process. Even Petitioner concedes that the question relates to "enhancing patent examination quality." Pet. 76.

It is the Director, however, not the Board, who is "responsible for providing policy direction and management supervision for the Office and for the issuance of patents." 35 U.S.C. § 3(2)(A). Accordingly, a post-grant review proceeding is not the proper vehicle for Petitioner's request. *See In re Searles*, 422 F.2d 431, 435 (C.C.P.A. 1970) ("The examiner's rulings

dealing with procedural matters . . . are reviewable upon petition" to the Director, not the Board).

In view of the foregoing, the Petition does not raise a novel or unsettled legal question warranting institution of a post-grant review proceeding under 35 U.S.C. § 324(b).

H. Discretionary Denial Under § 325(d)

In view of our determination to deny institution on the merits, we do not need to address the parties' arguments regarding discretionary denial.

III. CONCLUSION

For the foregoing reasons, we conclude that the information presented in the Petition does not establish that the '020 patent is eligible for post-grant review. Accordingly, we deny institution of a post-grant review of claims 1–20 of the '020 patent.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is *denied* and no trial is instituted.

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