

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

ECOFACOR, INC.,
Patent Owner.

IPR2021-01578
Patent 8,886,488 B2

Before WESLEY B. DERRICK, JEFFREY W. ABRAHAM and
SCOTT B. HOWARD, *Administrative Patent Judges*.

HOWARD, *Administrative Patent Judge*.

DECISION

Denying Petitioner's Request on Rehearing of Decision

Denying Institution of *Inter Partes* Review

37 C.F.R. § 42.71(d)

INTRODUCTION

Google LLC (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 1–15 of U.S. Patent No. 8,886,488 B2 (Ex. 1001, “the ’488 patent”). EcoFactor Inc. (“Patent Owner”) filed a Preliminary Response to the Petition (Paper 6, “Prelim. Resp.”). We issued a Decision Denying Institution of *Inter Partes* Review. Paper 9 (“Institution Decision,” “Inst. Dec.”).

Petitioner filed a timely Request for Rehearing Pursuant to 37 C.F.R. § 42.71(d) along with a request for Precedential Opinion Panel (“POP”) review. Paper 10 (“Rehearing Request,” “Req. Reh’g”); Ex. 3001. In view of the Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (“Interim Procedure”)¹, POP denied the request for POP review and ordered that the original panel maintains authority for all matter, including deciding the Rehearing Request. Paper 12 (POP Review Order). When rehearing a decision on a petition, the decision will be reviewed for an abuse of discretion. 37 C.F.R. § 42.71(c) (2021).

We have authority, acting on the designation of the Director, to determine whether to institute an *inter partes* review under 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a). *Inter partes* review may not be instituted unless “the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims

¹ Available at: https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf

challenged in the petition.” 35 U.S.C. § 314(a) (2018). “When instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.” 37 C.F.R. § 42.108(a).

For the reasons set forth below, upon considering the briefing and the evidence of record, we determine that the original institution decision was in error in light of the Interim Procedure, but that the information presented in the Petition does not establish a reasonable likelihood that Petitioner will prevail with respect to at least one of the challenged claims. Accordingly, we do not institute *inter partes* review and deny the Rehearing Request to the extent that we do not institute review.

A. The '488 Patent

The '488 patent is entitled “System and Method for Calculating the Thermal Mass of a Building” and is directed to “thermostats [that] are combined with a computer network to calculate the thermal mass of a structure.” Ex. 1001, code (54), 1:21–24. The thermal mass of the building is calculated using the following procedure:

The climate control system obtains temperature measurements from at least a first location conditioned by the climate system. One or more processors receive measurements of outside temperatures from at least one source other than the control system and compare the temperature measurements from the first location with expected temperature measurements. The expected temperature measurements are based at least in part upon past temperature measurements obtained by said HVAC control system and said outside temperature measurements. The processors then calculate one or more rates of change in temperature at said first location.

Id. at code (57).

B. Illustrative Claim

Petitioner challenges claims 1–15 of the '488 patent. Claims 1 and 9 are independent claims. Claim 1 is illustrative and reproduced below:

1. A system for calculating a value for the operational efficiency of a heating, ventilation and air conditioning (HVAC) system comprising:

at least one HVAC control system that receives inside temperature measurements from at least a first location conditioned by at least one HVAC system;

one or more databases that store at least said temperatures measured at said first location over time;

one or more processors comprising computer hardware that is *configured to receive outside temperature measurements from at least one source other than said HVAC system*, wherein said one or more processors are configured to calculate one or more predicted rates of change in said inside temperature measurements at said first location based on the status of the HVAC system and to relate said one or more predicted rates of change to said outside temperature measurements; and

said one or more processors further configured to compare at least one predicted temperature based on the one or more predicted rates of change, with an actual inside temperature measurement.

Ex. 1001, 13:31–51 (emphasis added).

C. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–15 would have been unpatentable based on the following grounds:

Claim(s) Challenged	35 U.S.C. § ²	Reference(s)/Basis
1, 5–9, 13–15	102(b)	Shah '927 ³
1, 5–9, 13–15	103(a)	Shah '927, Shah '233 ⁴
2, 3, 10, 11	103(a)	Shah '927, Rosen ⁵
2, 3, 10, 11	103(a)	Shah '927, Shah '233, Rosen
4, 12	103(a)	Shah '927, Ehlers ⁶
4, 12	103(a)	Shah '927, Shah '233, Ehlers

Petitioner also relies on a declaration from Rajendra Shah⁷ (Ex. 1002, “the Shah Declaration”).

ANALYSIS

A. *Legal Standard for Rehearing*

When rehearing a decision on institution, the Board “review[s] the decision for an abuse of discretion.” 37 C.F.R. § 42.71(c). An abuse of discretion may arise if the decision is based on an erroneous interpretation of law, if substantial evidence does not support a factual finding, or if an unreasonable judgment is made in weighing relevant factors. *Star Fruits S.N.C. v. U.S.*, 393 F.3d 1277, 1281 (Fed. Cir. 2005); *Arnold P’ship v. Dudas*, 362 F.3d 1338, 1340 (Fed. Cir. 2004); *In re Gartside*, 203 F.3d 1305, 1315–16 (Fed. Cir. 2000). We may also grant a rehearing in a

² The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. §§ 102, 103 that became effective on March 16, 2013. Because the application that led to the issuance of the '488 patent was filed on March 1, 2012, we apply the pre-AIA version. See Ex. 1001, code (22).

³ US 5,555,927, issued Sept. 17, 1996 (Ex. 1004).

⁴ US 6,478,233 B1, issued Nov. 12, 2002 (Ex. 1006).

⁵ US 6,789,739 B2, issued Sept. 14, 2004 (Ex. 1010).

⁶ US 2004/0117330 A1, published June 17, 2004 (Ex. 1008).

⁷ Petitioner’s declarant Mr. Shah is not the named inventor of Shah '927 or Shah '233.

pending proceeding in light of an intervening change of law or Director guidance. *See Med-El Elektromedizinsche Geräte Ges.m.b.H. v. Advanced Bionics AG*, IPR2020-01016, Paper 44 (PTAB Aug. 22, 2022) (Granting Director Review) (granting rehearing based on an intervening change of Director guidance).

B. Discretionary Denial

In the Institution Decision, we exercised our discretion to deny institution based on a concurrent ITC proceeding. Inst. Dec. Subsequent to the Institution Decision, the Director issued guidance stating as follows: “The PTAB will not discretionarily deny petitions based on applying *Fintiv* to a parallel ITC proceeding.” Interim Procedure 7. Because Patent Owner’s request for discretionary denial and our Institution Decision was based exclusively on the pending ITC proceeding (*see* Prelim. Resp. 6–12; Inst. Dec.), we no longer exercise our discretion to deny institution. Instead, we address the merits of the Petition to determine whether “the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a).

C. Legal Standards – Anticipation and Obviousness

1. Anticipation

A patent claim is unpatentable under 35 U.S.C. § 102 if “the four corners of a single, prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation.” *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000). “A single prior art reference may anticipate without disclosing a

feature of the claimed invention if such feature is necessarily present, or inherent, in that reference.” *Allergan, Inc. v. Apotex Inc.*, 754 F.3d 952, 958 (Fed. Cir. 2014). Moreover, the reference must also “disclose[] within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim.” *Net MoneyIN, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008). However, “the reference need not satisfy an *ipsissimis verbis* test.” *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009).

2. *Obviousness*

In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), the Supreme Court set out a framework for assessing obviousness under 35 U.S.C. § 103 that requires consideration of four factors: (1) the “level of ordinary skill in the pertinent art,” (2) the “scope and content of the prior art,” (3) the “differences between the prior art and the claims at issue,” and (4) “secondary considerations” of non-obviousness such as “commercial success, long felt but unsolved needs, failure of others, etc.” *Id.* at 17–18. “While the sequence of these questions might be reordered in any particular case,” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 407 (2007), the U.S. Court of Appeals for the Federal Circuit has repeatedly emphasized that “it is error to reach a conclusion of obviousness until all those factors are considered,” *WBIP v. Kohler*, 829 F.3d 1317, 1328 (Fed. Cir. 2016).⁸

D. *Level of Skill*

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art

⁸ Because neither party addresses objective evidence of non-obviousness, we focus solely on the first three *Graham* factors.

at the time of the invention. *Graham*, 383 U.S. at 17. “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). The “person having ordinary skill in the art” is a hypothetical construct, from whose vantage point obviousness is assessed. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998).

Factors pertinent to a determination of the level of ordinary skill in the art include “(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.” *Envtl. Designs, Ltd. v. Union Oil Co. of Cal.*, 713 F.2d 693, 696–697 (Fed. Cir. 1983) (citing *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1381–82 (Fed. Cir. 1983)). “Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case.” *Id.*

Petitioner argues that a person having ordinary skill in the art would have had a “(1) Bachelor’s degree in engineering, computer science, or a comparable field of study, and (2) at least five years of (i) professional experience in building energy management and controls, or (ii) relevant industry experience. Additional relevant industry experience may compensate for lack of formal education or vice versa.” Pet. 20–21 (citing Ex. 1002 ¶¶ 26–27).

Patent Owner does not address the level of skill. Prelim. Resp.

Accordingly, we adopt Petitioner’s formulation of the level of skill, except we delete the qualifier “at least” to eliminate vagueness as to the

amount of practical experience. The qualifier expands the range indefinitely without an upper bound, and thus precludes a meaningful indication of the level of ordinary skill in the art.

E. Claim Construction

We apply the same claim construction standard used in the federal courts, in other words, the claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), which is articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). See 37 C.F.R. § 42.100(b). Under the *Phillips* standard, the “words of a claim ‘are generally given their ordinary and customary meaning,’” which is “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1312–13.

Petitioner identifies constructions from the ITC proceeding and proposes the construction of an additional term. Patent Owner does not address claim construction. See Prelim. Resp.

For purposes of this Decision, we need not expressly construe any disputed claim terms. See *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (noting that “we 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))).

F. Anticipation by Shah ’927

1. Shah ’927

Shah ’927 is entitled “Thermostat System Having an Optimized Temperature Recovery Ramp Rate.” Ex. 1004, code (54). Figure 1 is reproduced below.

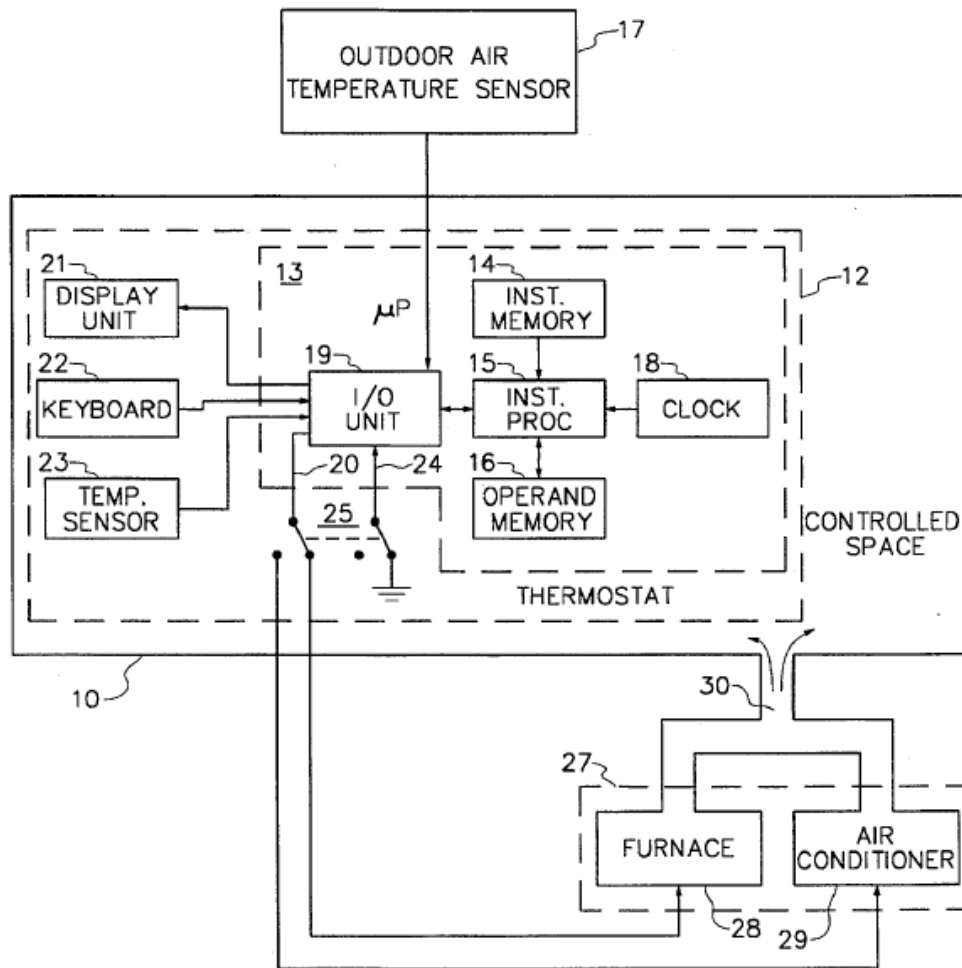


Figure 1 “is a block diagram of a thermostat mounted in a space for controlling the temperature of that space.” Ex. 1004, 8:19–21. Figure 1 includes “a furnace 28 and an air conditioner 29 which together comprise a space temperature control unit 27 for providing heated or cooled air through duct 30 to controlled space 10.” *Id.* at 8:40–43. The thermostat includes elements which are external to the microprocessor 13, including outdoor air temperature sensor 17. *Id.* at 8:63–9:3.

2. Analysis of Claims 1–15

Claim 1 of the ’488 patent recites, *inter alia*, “one or more processors comprising computer hardware that is configured to receive outside temperature measurements from at least one source other than said HVAC

system.” Ex. 1001, 13:39–42. Similarly, independent claim 9 also recites “receiving outside temperature measurements from at least one source other than said HVAC system.” *Id.* at 14:24–25.

Petitioner argues that Shah ’927 discloses that limitation. Pet. 37–40, 54. Specifically, Petitioner argues that “the processor 15 (the **one or more processors**), receives input from an outdoor air temperature sensor 17, which is **at least one source other than said HVAC system.**” *Id.* at 38 (citing Ex. 1004, 3:29–50, 4:50–55, 5:15–19, 5:27–30, 5:58–65, 9:1–11, 12:34–37, 14:55–67, claims 1, 3, 9–10; Ex. 1002 ¶ 101). Petitioner further argues that “[t]he outdoor air temperature sensor 17 is positioned outside the space temperature control unit 27 (the **HVAC system**) and is therefore **at least one source other than said HVAC system.**” *Id.* (citing Ex. 1002 ¶ 101). According to Petitioner, “[t]he outdoor air temperature sensor 17 is not a ‘heating, ventilation, and/or cooling device[]’ and does not ‘transfer heat into or out of a structure/location,’ and is therefore a **source other than** the space temperature control unit 27.” *Id.* (alteration in original) (citing Ex. 1007, pp. 38-39; Ex. 1019, 44; Ex. 1002 ¶ 102).

Petitioner also relies on a finding in an ITC proceeding involving a different patent, *In re Certain Smart Thermostats, Smart HVAC Systems, and Components Thereof*, Inv. No. 337-TA-1185 (“ITC 1185”) to support its argument. Pet. 38 (citing Ex. 1019, 44, 498).

Patent Owner does not address this limitation. Prelim. Resp.

We are not sufficiently persuaded that Shah ’927 discloses this limitation. Specifically, Petitioner has not sufficiently shown that outdoor air temperature sensor 17 is a source other than the HVAC system as required by claims 1 and 9. The foundation of Petitioner’s argument is that the HVAC system is limited to space temperature control unit 27. Pet. 27

(citing Ex. 1002 ¶ 83). The primary factual support for limiting the HVAC system to the actual heating and cooling units and not including any other necessary units, such as duct work (ventilation) or thermostats is the testimony of Mr. Shah. *See id.* But Mr. Shah does not cite persuasive evidence, such as industry documents, that shows that a person having ordinary skill in the art would understand that a HVAC system is limited to only the heating and cooling units. Ex. 1002 ¶ 83. Instead, Mr. Shah’s only evidence for this is Patent Owner’s lack of response to a rejection based on Shah ’927 during the prosecution of a patent application, a reference to a finding in ITC 1185, and a claim construction ruling from ITC 1285.⁹ *See* Ex. 1002 ¶¶ 83 n.3, 102. We do not find those non-industry sources sufficient.

First, Mr. Shah directs us to a page of a rejection of dependent claim 3 on an unrelated patent application that states the following: “Shah [’927] further teaches where said climate control system is a heating, ventilation and air conditioning system (space control temperature control unit 27 is an HVAC system).” Ex. 1015, 192 (Prosecution History of Application 12/773,690), cited by Ex. 1002 ¶ 82 n.3. According to Mr. Shah, “[Patent Owner] never disputed the Examiner’s statement.” Ex. 1002 ¶ 82 n.3. However, we do not find that the prosecution history supports Mr. Shah’s opinion. It is unclear from the sentence whether the Examiner is finding that those are the only elements of an HVAC system (which would support Petitioner’s position) or if the Examiner is pointing to elements of an HVAC

⁹ *In re Certain Smart Thermostat Systems, Smart HVAC Systems, Smart HVAC Control Systems, and Components Thereof*, Inv. No. 337-TA-1258 (ITC) (“ITC 1285”). The ’488 patent is the subject of ITC 1285. Pet. 7–8.

system (which is inconsistent with Petitioner’s position). *See* Ex. 1015, 192. Both interpretations would be consistent with the Examiner’s rejection. Nor do we agree with Mr. Shah that Patent Owner acquiesced in the finding when Patent Owner argued the claim was patentable both (1) because independent claim 1, from which claim 3 depended, was amended and (2) due to “the additional features [of dependent claim 3] recited therein.” *Id.* at 169. That is, contrary to Mr. Shah’s testimony, Patent Owner did not concede that the evidence supported the examiner’s finding. Further, a “patentee is not required to fight tooth and nail every possible adverse thought an examiner commits to paper, nor to advance redundant arguments for patentability.” *TorPharm, Inc. v. Ranbaxy Pharms., Inc.*, 336 F.3d 1322, 1330 (Fed. Cir. 2003).

Second, we do not find the determination in ITC 1185 persuasive. That case involved a different patent, different claims, and different prior art. *See* Ex. 1019. Moreover, it stands in contradistinction to a different ITC determination involving the ’488 patent in which the ALJ found that Shah ’927’s¹⁰ sensor 17 is part of the HVAC system and “does not disclose receiving outside temperature measurements from a source other than the HVAC system.” Ex. 3003, 108 (ITC 1285 Initial Determination). Although ITC findings are not binding on us, we find the ALJ’s reasoning in ITC 1285 persuasive.

Third, the claim construction in ITC 1258 merely applies the plain and ordinary meaning. Ex. 1007, 38–39. But Mr. Shah does not provide any

¹⁰ Although the ITC was considering whether Shah ’233 discloses the limitation, the arguments focused on the disclosure of Shah ’927, which was incorporated by reference into Shah ’233. Ex. 3003, 105.

evidence to support his opinion that the plain and ordinary meaning limits an HVAC system to the heating and cooling unit only and does not include other elements. To the contrary, the IPR1285 claim construction implies the term is much broader: “So the examples provided in the 322 patent – air conditioners and heat pumps – are plainly not meant to be exclusive.” Ex. 1007, 38.

Because of the lack of evidence supporting his opinion, we give Mr. Shah’s opinion no weight. *See Rohm and Haas Co. v. Brotech Corp.*, 127 F.3d 1089, 1092 (Fed. Cir. 1997) (noting that a fact finder is not required to “credit the unsupported assertions of an expert witness”); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294 (Fed. Cir. 1985) (noting that the “[l]ack of factual support” for an expert opinion “may render the testimony of little probative value”).

Accordingly, based on the current record, Petitioner has not sufficiently shown that Shah ’927 anticipates independent claims 1 or 9, or dependent claims 2–8 and 10–15, which depend, directly or indirectly, from either claim 1 or 9. Therefore, Petitioner has not shown that there is a reasonable likelihood that Petitioner will prove that claims 1–15 are anticipated by Shah ’927.

G. Other Grounds

Petitioner also argues that all of the challenged claims are obvious over Shah ’927 in view of other prior art. Pet. 8–9. However, Petitioner does not rely on any of the additional references to address the missing limitation discussed above. *See* Pet. 59–80. Accordingly, Petitioner has not shown that there is a reasonable likelihood that claims 1–15 are unpatentable over Shah ’927 and either Shah ’233, Rosen, and/or Ehlers.

CONCLUSION

For the foregoing reasons, based on a change in controlling law, we no longer exercise our discretion to deny institution. However, we determine that Petitioner fails to show a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition. We, therefore, deny the request for rehearing.

ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Petitioner's Request for Rehearing of the Decision Denying Institution is *denied*.

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