

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

ECOFACITOR, INC.,
Patent Owner.

IPR2025-00097
Patent 11,835,394 B2

Before CHRISTOPHER L. ODGEN, SCOTT B. HOWARD, and
BRENT M. DOUGAL, *Administrative Patent Judges*.

DOUGAL, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Petitioner, Google LLC, requests that we institute an *inter partes* review challenging the patentability of claims 1–18 (the “challenged claims”) of U.S. Patent 11,835,394 B2 (Ex. 1001, “the ’394 patent”). Paper 2 (“Petition” or “Pet.”). Patent Owner, EcoFactor, Inc., did not file a preliminary response.

Applying 35 U.S.C. § 314(a), which requires demonstration of a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim, we institute an *inter partes* review.¹

A. *Related Matter*

The parties identify the following related district court litigation: *EcoFactor, Inc. v. Google LLC*, Case No. 4-24-cv-00175 (N.D. Cal.). Pet. 8; Paper 4, 1.

B. *The ’394 Patent*

The ’394 patent is titled “System and Method for Evaluating Changes in the Efficiency of an HVAC System.” Ex. 1001, code (54). The ’394 patent generally relates to “systems and methods for evaluating changes in the operational efficiency of an HVAC system over time.” *Id.* at code (57). More specifically, the ’394 patent is directed to evaluating changes in operational efficacy by comparing temperature measurements from locations conditioned by the HVAC system and measurements of outside temperatures from sources other than the HVAC system and comparing these to the expected temperature measurements for HVAC conditioned locations, taking into account the status of the HVAC system, where the expected

¹ Our findings and conclusions at this stage are preliminary, and thus, no final determinations are made.

temperature measurements are based at least in part on past temperature measurements. *Id.*

C. Illustrative Claim

Of the challenged claims, 1 and 10 are independent. Claim 1, reproduced below, is illustrative:

1. A control system for an environment inside a structure, comprising:

a climate control device in the structure that receives first temperatures from inside the structure;

a processor that:

receives second temperatures from outside the structure from at least one source outside the structure; and

compares the first temperatures and the second temperatures over time to calculate a current operating profile for the climate control device; and

a database that stores the current operating profile for the climate control device,

wherein the processor (a) compares a portion of the current operating profile for the climate control device with a stored temperature profile that represents a previous operating profile for the climate control device calculated at a different time to evaluate whether an operational efficiency of the climate control device has decreased over time, and (b) outputs a result of the evaluation, wherein: the portion of the current operating profile for the climate control device is limited to a specified first time interval, and the stored temperature profile is limited to a specified earlier second time interval.

Ex. 1001, 14:11–34.

D. Evidence

Petitioner's grounds of unpatentability rely on the following evidence:

Name	Patent Document	Exhibit
Hildebrand	US 5,729,474 (Mar. 17, 1998)	1004
Shah	US 5,555,927 (Sept. 17, 1996)	1006
Rosen	US 6,789,739 B2 (Sept. 14, 2004)	1009
Van Ostrand	US 2005/0159846 A1 (July 21, 2005)	1007
McNulty	US 2011/0251726 A1 (Oct. 13, 2011)	1024

E. Asserted Grounds

Petitioner asserts the following grounds of unpatentability (Pet. 9), supported by the declaration of Mr. Rajendra K. Shah (Ex. 1002):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–3, 5, 10–12, 14	103 ²	Hildebrand, Shah
1–5, 10–14	103	Hildebrand, Shah, Rosen
1–3, 5, 6, 10–12, 14, 15	103	Hildebrand, Shah, Van Ostrand
1–6, 10–15	103	Hildebrand, Shah, Rosen, Van Ostrand
7–9, 16–18	103	Hildebrand, Shah, Rosen, Van Ostrand, McNulty

II. ANALYSIS

A. Legal Standards

Petitioner bears the burden to demonstrate unpatentability. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). At this preliminary stage, we determine whether the information presented in the Petition shows a reasonable likelihood that Petitioner would prevail in establishing that at least one of the challenged claims would have

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284, 285–88 (2011), revised 35 U.S.C. § 103 effective March 16, 2013. We refer to the pre-AIA version of § 103.

been obvious over the proposed combinations of prior art. *See* 35 U.S.C. § 314(a).

A claim is unpatentable as obvious under 35 U.S.C. § 103 “if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before . . . invention to a person having ordinary skill in the art.”

B. Level of Ordinary Skill in the Art

The level of skill in the art for a person of ordinary skill in the art (“POSITA”) is defined in the Petition as:

a (1) Bachelor’s degree in engineering, computer science, or a comparable field of study, and (2) 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. 22 (citing Ex. 1002 ¶¶ 27–33). At this stage we determine that this is a reasonable characterization and analyze the Petition from the perspective of this POSITA.

C. Claim Construction

We construe the claims in accordance with the ordinary and customary meaning as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b).

No terms need to be expressly construed at this time.

D. 35 U.S.C. § 103 – Hildebrand, Shah

Petitioner argues that the combination of Hildebrand and Shah renders obvious claims 1–3, 5, 10–12, and 14. Pet. 14–53. Petitioner also argues that Hildebrand alone teaches or suggests the features of independent claims 1 and 10. *Id.* at 15. As noted, Patent Owner did not file a preliminary response

and thus does not address any ground of unpatentability presented in the Petition.

After review of the evidence and arguments, we determine that Petitioner has established a reasonable likelihood of showing that claim 1 is unpatentable over Hildebrand whether alone or in combination with Shah.

1. Claim 1

Petitioner provides extensive argument and discussion about claim 1, supported by citations to Hildebrand and Shah, as well as to their declarant's testimony. *See* Pet. 14–44. Petitioner argues that Hildebrand teaches or suggests all the limitations of claim 1, but Petitioner includes alternative arguments relying on Shah because Patent Owner “may present arguments regarding the claimed ‘operating profile’ and ‘operational efficiency’ including that an operational efficiency must be measured in unit time.” *Id.* at 15 (citing Ex. 1031, 17 (Joint Claim Construction Brief)). As previously noted, we decline to expressly construe any claim terms at this stage.

Concerning Hildebrand, Petitioner has shown a reasonable likelihood that Hildebrand teaches an HVAC system that uses inside and outside temperature measurements to determine whether the ability of the system to change the temperature in a particular area has deteriorated over time. *See* Pet. 15–16, 25–44 (citing e.g., Ex. 1004, 1:11–18, 3:21–54, 3:61–8:49, 13:50–14:52, code [57], Fig. 1; Ex. 1002 ¶¶ 59–60, 84–139). Petitioner matches these and other teachings with each of the limitations of claim 1. *Id.*

Petitioner further identifies that Shah similarly teaches calculating operational efficiency values for an HVAC system and using these values “to monitor the integrity of the thermal system.” *Id.* at 17–18 (quoting Ex. 1006, 4:63–5:10). Petitioner matches these and other teachings in combination with Hildebrand to each of the limitations of claim 1. *Id.* at 17–

44 (citing e.g., Ex. 1006, 3:21–5:10, 5:22–27, 7:22–33, 8:19–43, 10:3–5, 10:32–36, 11:59–61, 12:2–20, Fig. 1; Ex. 1002 ¶¶ 61–140). Petitioner also provides an extensive discussion of the reasons to combine Shah with the system of Hildebrand, such as to avoid being limited, like Hildebrand, to comparisons of system efficiencies between time periods with the same outside temperature. *Id.* at 19; *see also id.* at 18–24.

We have reviewed the Petition and supporting evidence and determine that the Petition demonstrates a reasonable likelihood that Petitioner would prevail in showing that claim 1 is unpatentable over Hildebrand alone or in combination with Shah.³

2. *Claims 2–5, 10–14*

Having determined that Petitioner has established a reasonable likelihood of showing that claim 1 is unpatentable, it is unnecessary to address claims 2–5 and 10–14 at this time.

E. 35 U.S.C. § 103 – Other Grounds

Having determined that Petitioner has established a reasonable likelihood of showing that claim 1 is unpatentable, it is unnecessary to address the additional grounds of unpatentability.

III. CONCLUSION

For the foregoing reasons, there is a reasonable likelihood that Petitioner will prevail with respect to at least one claim. We therefore institute trial.

³ Because we find the references teach all the limitations, we do not need to address at this stage, Petitioner’s argument that issue preclusion applies. *See* Pet. 12–13.

IV. ORDER

It is ORDERED that:

Inter partes review of the challenged claims of U.S. Patent 11,835,394 B2 is instituted; and

Trial starts on the entry date of this decision. 35 U.S.C. § 314(c).

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