Trials@uspto.gov
571-272-7822

Paper 26
Date: August 1, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC and
ECOBEE TECHNOLOGIES ULC,
Petitioner,

v.

ECOFACTOR, INC.,
Patent Owner.

IPR2022-00538[1]
Patent 9,194,597 B2

Before SCOTT B. HOWARD, PAUL J. KORNICZKY, and BRENT M. DOUGAL, *Administrative Patent Judges*.

DOUGAL, *Administrative Patent Judge*.

DECISION
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

---

[1] IPR2022-01461 (ecobee Technologies ULC) has been joined with this proceeding.

I. INTRODUCTION

A. Background and Summary

On a Petition (Paper 1 ("Pet.")) from Google LLC, we instituted an *inter partes* review of claims 1–24 (the "challenged claims") of U.S. Patent 9,194,597 B2 (Ex. 1001, "the '597 patent"). Paper 7 ("Dec.").

Patent Owner, EcoFactor, Inc., filed a Response (Paper 10, "PO Resp."), Petitioner[2] filed a Reply (Paper 14, "Reply"), and Patent Owner filed a Sur-reply (Paper 15, "Sur-reply"). An oral hearing was held on May 11, 2023, and a copy of the transcript was entered into the record. Paper 25 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of the claims on which we instituted trial. Having reviewed the arguments of the parties and the supporting evidence, we determine that Petitioner has shown, by a preponderance of the evidence, that the challenged claims are unpatentable.

B. Related Matters

The parties identify the following related district court litigation: *Google, LLC v. EcoFactor, Inc.*, No. 4:21-cv-03220 (N.D. Cal.); and *EcoFactor, Inc. v. ecobee, Inc.*, No. 6:21-cv-00428 (W.D. Tex.). Pet. 5; Paper 4, 2 (Patent Owner's Mandatory Notices); Paper 21 (Joint Notice Regarding Co-pending Litigation). Petitioner also notes that it "is in the process of filing petitions for inter partes review challenging all claims of

[2] Google LLC and ecobee Technologies ULC.

the other three patents [involved in the *Google v. EcoFactor* litigation referenced *supra*]." Pet. 72–73.

C. The '597 Patent

The '597 patent is entitled "System, Method and Apparatus for Identifying Manual Inputs to and Adaptive Programming of a Thermostat." Ex. 1001, code (54). The '597 patent explains that programmable thermostats can "enhance comfort as compared to manually changing setpoints using a non-programmable thermostat," but "[i]f the temperatures programmed into a thermostat do not accurately reflect the preferences of the occupants, those occupants are likely to resort to manual overrides of the programmed settings." *Id.* at 1:25–28, 1:60–2:8. Techniques disclosed in the '597 patent detect manual changes to the setpoint for a thermostatic controller and then incorporate those manual changes into the long-term programming of the thermostatic controller. *Id.*, Abstr.

The '597 patent explains that most thermostats do not record manual inputs locally, and also do not recognize or transmit the fact that a manual override has occurred. *Id.* at 5:45–48. Moreover, frequent changes in setpoints may be automatically initiated by thermostat algorithms, making it difficult to infer a manual override from the mere fact that a setpoint has changed. *Id.* at 5:47–53. Figure 7, reproduced below, illustrates a method for detecting the occurrence of a manual override. *Id.* at 5:54–55.

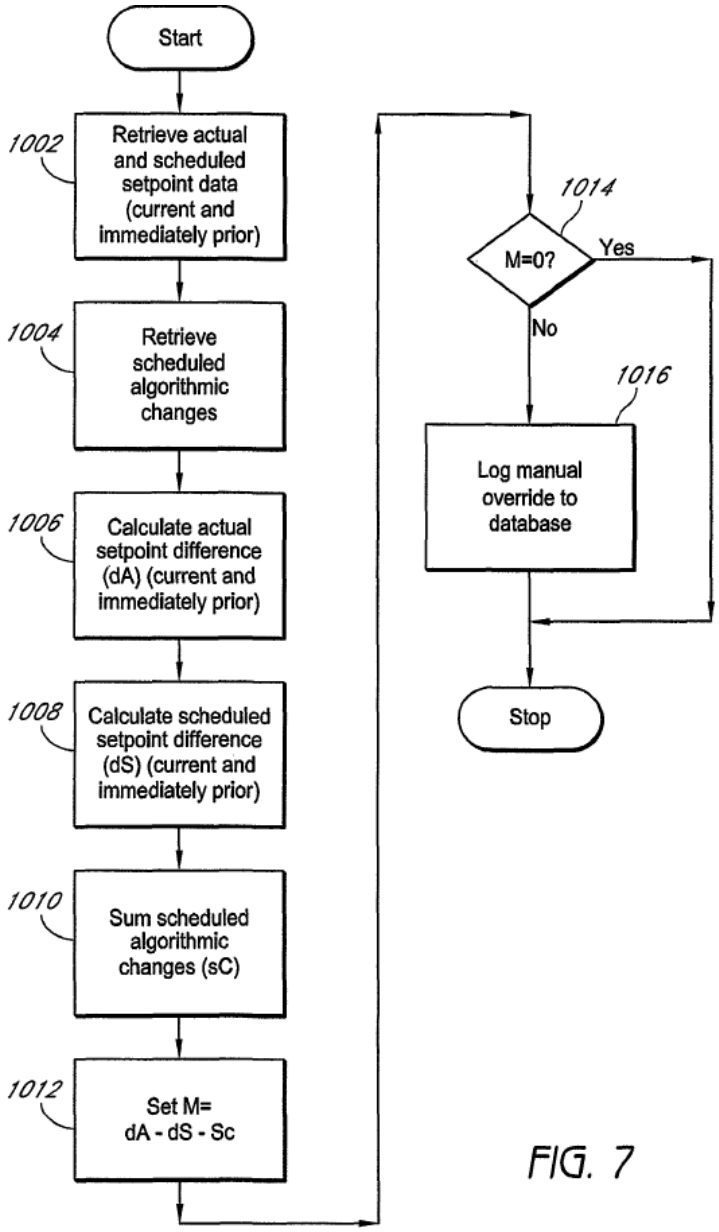

FIG. 7

At step 1002 illustrated in Figure 7, a server associated with the thermostat (e.g., a thermostat management server) retrieves setpoint data used to infer the occurrence of a manual override from one or more databases. *Id.* at 3:61–63, 5:55–6:19. At step 1004, the server retrieves any scheduled automated setpoint changes. *Id.* Such changes may include algorithmic changes intended to reduce energy consumption. *Id.*

At step 1006, the server calculates the setpoint difference. *Id.* At step 1008, the server calculates the scheduled setpoint difference. *Id.* At step 1010, the server evaluates and sums all active algorithms and other server-initiated strategies to determine their net effect on the setpoint. *Id.* For example, if one algorithm has increased setpoint by 2 degrees as a short-term energy savings measure, but another algorithm has decreased the setpoint by one degree to compensate for expected subjective reactions to weather conditions, the net algorithmic effect is +1 degree. *Id.*

At step 1012, the server calculates the value for M, where M is equal to the difference between actual setpoints d**A**, less the difference between scheduled setpoints d**S**, less the aggregate of algorithmic change sC. *Id.* at 6:20–30. At step 1014, the server evaluates the difference—if the difference equals zero, the server concludes that no manual override has occurred; however, if the difference is non-zero, the server concludes that a manual override has occurred, and at step 1016, the server logs the override to the database(s). *Id.*

After a manual override has been recognized, it can be used to either make short-term changes to the thermostat, or to alter long-term changes to interpretive rules and to setpoint scheduling for the thermostat. *Id.* at 2:37–42. Figure 8, reproduced below, illustrates a process of interpreting manual overrides and making short-term thermostat changes in response thereto. *Id.* at 2:37–42, 6:31–32.

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.