

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LENNOX INDUSTRIES INC.,
Petitioner,

v.

ROSEN TECHNOLOGIES LLC,
Patent Owner.

IPR2023-00718
Patent 7,185,825 B2

Before MEREDITH C. PETRAVICK, JAMES P. CALVE and
JASON W. MELVIN, *Administrative Patent Judges*.

PETRAVICK, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background and Summary

Lennox Industries Inc. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1, 4, and 11–16 of U.S. Patent No. 7,185,825 B2 (Ex. 1001, “the ’825 patent”). Paper 2 (“Pet.”). Rosen Technologies LLC (“Patent Owner”) file a Preliminary Response. Paper 6 (“Prelim. Resp.”).

We authorized the parties to submit additional briefing to address Patent Owner's request for discretionary denial under 35 U.S.C. § 314. *See* Prelim. Resp. 5–11. Petitioner filed a Reply (Paper 7, “Prelim. Reply”) and Patent Owner filed a Sur-reply (Paper 8, “Prelim. Sur-reply”). We note that in the Sur-reply, Patent Owner has withdrawn its request for discretionary denial and the request is now moot. Prelim. Sur-reply 1.

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the petition “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.”

After considering the Petition, the Preliminary Response, and the evidence of record, we determine the information presented shows a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of at least one of the Challenged Claims of the '825 patent. Accordingly, we institute an *inter partes* review of claims 1, 4, and 11–16 of the '825 patent on the grounds asserted in the Petition.

B. Real Parties-in-Interest

Petitioner identifies Lennox Industries Inc., Lennox International, Inc., Heatcraft Inc., Heatcraft Technologies Inc., and Lennox Procurement Company Inc. as the real parties-in-interest. Pet. 1.

Patent Owner identifies itself as the real party-in-interest. Paper 3, 1.

C. Related Matters

The parties identify the following related court proceedings:

Rosen Techs. LLC v. Lennox Indus. Inc., No. 3:22-cv-00732-K
(N.D. Tex. Mar. 31, 2022);

Rosen Techs. LLC v. Resideo Techs., Inc., No. 6:22-cv-00131
(W.D. Tex. Feb. 6, 2022); and

Verdant Envtl. Techs. v. Ecobee Inc., No. 1:10-cv-02771 (N.D.
Ill. May 4, 2010).

Pet. 2; *see also* Pet. 3, 1. Additionally, related patents are the subject of the following *inter partes* review proceedings: IPR2023-00715 (U.S. Patent No. 6,619,55), IPR2023-00716 (U.S. Patent No. 6,789,739), IPR2023-00719 (U.S. Patent No. 7,232,075).

D. The '825 Patent

The '825 patent, titled “Programmable Thermostat Employing a Fail Safe Real Time Clock,” issued on March 6, 2007 and from an application filed on June 24, 2004. Ex. 1001, code (45), (22), (54).

The '825 patent describes “a programmable thermostat incorporating a fail safe real time clock and which does not require battery or other backup device in case of a power failure.” *Id.* at Abst., 1:8–10.

The '825 patent addresses the problem of maintaining time and date information in the event of power failures. Ex. 1002 ¶46. The '825 Patent proposes to eliminate “the need for providing a backup power source” such as a battery or supercapacitor, for a thermostat. Ex. 1001, Abst., 2:18–22, 2:37–40. Instead, a “fail safe” real-time clock is employed. *Id.* at 2:57–60.

The '825 patent discloses three embodiments of clock that is fail safe in case of a power outage. The first embodiment is a thermostat having

a non-volatile random access memory in which the current time and date are periodically read from the real time clock into the random access memory such that, in the event of an outage, the last time and date previously stored is recovered from the non-volatile random access memory upon the restoration of power to reset the real time clock in anticipation of resuming operation in the mode running at the time of the outage.

Id. at 3:1–9. The second embodiment has a thermostat that “normally keep[s], and resume[s] after an outage, precision time from a suitable source such as WWVB.” *Id.* at 6:26–28. WWVB is a station that broadcasts a time signal using radio waves since the 1960s. Ex. 1002 ¶ 48. In a third embodiment, time can be retrieved via the Internet and stored in the clock of the thermostat. Ex. 1001, 6:33–38.

E. Illustrative Claims

Petitioner challenges claims 1, 4, and 11–16 of the '825 patent. Claims 1 and 11 are independent claims. Claim 4 depends from claim 1 and claims 12–16 depend directly or indirectly from claim 11. Claims 1 and 11 are illustrative and reproduced below.

1. A programmable thermostat for controlling space conditioning equipment comprising:
 - A) means coupling suitable power for energizing said thermostat from said space conditioning equipment to said thermostat;
 - B) an interactive interface for a user to enter programming information into said thermostat;
 - C) a temperature sensor for providing an electrical signal indicative of the temperature of a conditioned space in which the temperature sensor is situated;

D) a processor, said processor including:

- 1) a central processing unit;
- 2) a first memory coupled to said central processing unit for storing program and data information; and
- 3) an input/output unit including:
 - a) a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom; and
 - b) a control output coupled to the space conditioning equipment for issuing control signals thereto;
- 4) a real time clock;
- 5) a non-volatile random access memory; and
- 6) a control program stored in said first memory directing:
 - a) said real time clock to periodically read its current time and date information into said non-volatile memory; and
 - b) upon restart after a loss and then return of power from said space conditioning equipment, read the time and date information stored in said non-Volatile memory into said real time clock.

11. A programmable thermostat for controlling space conditioning equipment comprising:

- A) means coupling suitable power for energizing said thermostat from said space conditioning equipment to said thermostat;
- B) an interactive interface for a user to enter programming information into said thermostat;
- C) a temperature sensor for providing an electrical signal indicative of the temperature of a conditioned space in which the temperature sensor is situated;

D) a processor, said processor including:

- 1) a central processing unit;
- 2) a first memory coupled to said central processing unit for storing program and data information; and
- 3) an input/output unit including:
 - a) a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom; and
 - b) a control output coupled to the space conditioning equipment for issuing control signals thereto;
- 4) a real time clock; and
- 5) a receiver adapted to receive current time and date information from an external source of the current time and date, said receiver being coupled to said real time clock such that the time and date information thereof is updated from said receiver.

Ex. 1001, 6:58–7:20, 8:3–28.

F. Asserted Grounds

Petitioner asserts that claims 1, 4, and 11–16 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 4	103 ¹	Rosen ² , Cacciatore ³ , Shigeaki ⁴
11, 12, 13, 16	103	Rosen, Cacciatore, Carey ⁵
11, 14, 15, 16	103	Rosen, Cacciatore, Williamson ⁶
1	103	Shamoon ⁷ , Cacciatore, Shigeaki
4	103	Shamoon, Cacciatore, Shigeaki, Toth ⁸
11, 12	103	Shamoon, Cacciatore, Carey
13, 16	103	Shamoon, Cacciatore, Carey, Toth
11, 14	103	Shamoon, Cacciatore, Williamson
15, 16	103	Shamoon, Cacciatore, Williamson, Toth

Petitioner relies upon the Declaration of Dr. R. Jacob Baker, Ph.D., P.E. (Ex. 1002) to support its challenges.

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (Sept. 16, 2011), includes revisions to Sections 102 and 103 that became effective on March 16, 2013. Because the challenged claims issued from an application filed before March 16, 2013, we apply pre-AIA law.

² U.S. Patent Application Publication No. 2003/0142121 A1, published July 31, 2003 (Ex. 1004).

³ U. S. Patent No. 4,799,176, issued Jan. 17, 1989 (Ex. 1005).

⁴ Certified English language translation of Japanese Patent No. 2740118, published June 16, 1995 (Ex. 1006).

⁵ U.S. Patent Application Publication No. 2003/0121652 A1, published July 3, 2002 (Ex. 1007).

⁶ U.S. Patent No. 7,133,739, issued Nov. 7, 2006 (Ex. 1010).

⁷ U.S. Patent Application Publication No. 2003/0034898 A1, published Feb. 20, 2003 (Ex. 1008).

⁸ U.S. Patent No. 6,318,639 B1, issued Nov. 20, 2001 (Ex. 1012).

II. ANALYSIS

A. Legal Standards

A patent claim is unpatentable under 35 U.S.C. § 103 if differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. 35 U.S.C. § 103; *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR*, 550 U.S. at 416. Similarly, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *Id.* at 417.

The question of obviousness is resolved based on underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Neither party presents any objective evidence of non-obviousness at this stage of the proceeding.

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art (“POSITA”) “would have had a Bachelor of Science degree in Electrical Engineering or a year or two of experience working with or designing processor-based systems with network connectivity.” Pet 7 (citing Ex. 1003

¶ 54). Petitioner asserts that “[t]his level of skill is approximate, and more experience would compensate for less formal education, and vice versa.” *Id.*

Patent Owner contends that a POSITA

would have a bachelor’s degree in engineering, computer science, or a comparable field, with at least 2 years’ experience in temperature controls, embedded control systems, electronic thermostats, or HVAC controls, or similarly relevant industry experience, with relevant experience substituting for education and vice versa.

Prelim. Resp. 4.

We perceive no significance to how any difference between the two definitions might affect our analysis. To the extent either party believes its proposed level of skill affects part of the unpatentability analysis, it should explain how during the instituted trial.

C. Claim Construction

In this *inter partes* review, we apply the same claim construction standard that would be used in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b). In applying this standard, we generally give claim terms their ordinary and customary meaning as would be understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc).

Petitioner proposes to construe the term “means coupling” as governed by 35 U.S.C. § 112, ¶ 6, with a function of “coupling suitable power for energizing said thermostat from said space conditioning equipment to said thermostat” and a structure of “a (power) line and any equivalents.” Pet. 10–11. Patent Owner does not dispute this construction.

Prelim. Resp. 4. Based on the record at this stage of the proceeding, we adopt Petitioner’s proposed constructions of this term.

We, however, do not need to construe any terms expressly to reach our institution decision. *See Realtime Data LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those 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))).

D. Grounds Based on Rosen

Rosen is a U.S. patent application publication filed on January 30, 2002 and published on July 21, 2003. Ex. 1004, code (10), (43). Petitioner contends that Rosen is prior art under pre-AIA §§ 102(a) and (e). Pet. 12.

At this stage of the proceeding, Patent Owner does not dispute that Rosen is available as prior art. *See generally* Prelim. Resp. We, however, have some concerns as to whether Rosen is available as prior art under pre-AIA §§ 102(a) or (e), because both require that the reference be by others or by another. *See also In re Katz*, 687 F.2d 450, 454 (CCPA 1982) (“[O]ne’s own work is not prior art under § 102(a) even though it has been disclosed to the public in a manner or form which otherwise would fall under § 102(a).”). Rosen has the same inventive entity, Howard B. Rosen, as the ’825 patent. *Id.* at code (76); Ex. 1001, code (76); *see also* Pet. 12 (“by the same inventor”). We invite the parties to further develop this issue during trial.

E. Unpatentability Based on Shamoon, Cacciatore, and Shigeaki

Petitioner contends that claim 1 is unpatentable over Shamoon, Cacciatore, and Shigeaki. Pet. 47–62

1. Summary of Shamoon

Shamoon is a U.S. patent application publication filed on November 13, 2001 and published on February 20, 2003. Ex. 1008, code (22). (43). Petitioner contends that Shamoon is prior art at least under §§ 102(a), (b) and (e). Pet. 16.

Shamoon is titled “Thermostat and Remote Control System and Method.” Ex. 1008, code (54). Shamoon’s Figure 6 is reproduced below.

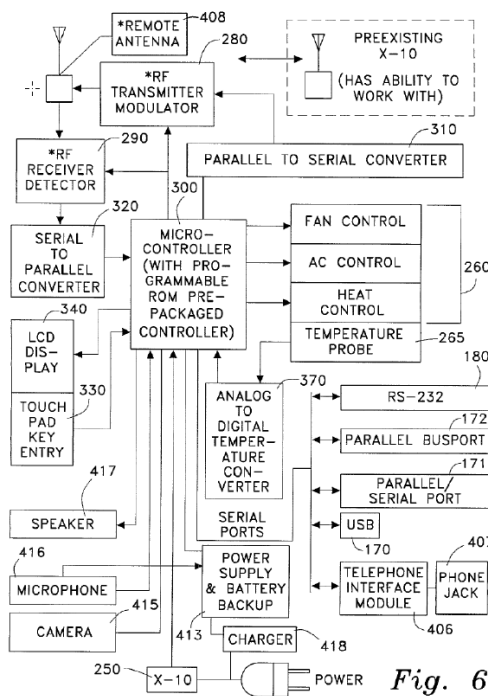


Figure 6 is a block diagram of a remote control apparatus, a thermostat, and X-10 components. *Id.* ¶ 34. The thermostat has a microcontroller 30, which has a programmable memory and runs the components of the thermostat. *Id.* ¶ 60.

2. *Summary of Cacciatore*

Cacciatore is titled “Electronic Digital Thermostat,” was filed on December 29, 1986, and issued on January 17, 1989. Ex. 1001, code [22], [45]. Petitioner contends that Cacciatore is prior art under pre-AIA 35 U.S.C. §§ 102(a), (b) and (e). Pet. 13.

Cacciatore discloses powering a thermostat with “an external alternating current power source of the temperature conditioning system and utilizing conventional existing wiring.” Ex. 1005, Abst., 5:23–27.

3. *Summary of Shigeaki*

Shigeaki is a Japanese Patent Application Publication, which published on June 16, 1995. Ex. 1006, code (43). Petitioner contends that Shigeaki is prior art at least under 35 U.S.C. §§ 102(a) and (b). Pet. 14.

Shigeaki discloses a clock device for a gas hot-air heater. Ex. 1006, ¶

2. Shigeaki teaches:

[0003] However, when commercial power fails, stopping the power for operation to the timekeeping means reset the clock, and when the power is restored, the timekeeping means starts clocking from “0:00”. Except when power is restored at a time close to “0:00”, the actual current time and the displayed current time are significantly different, so it takes time and effort for the user to reset the clock.

[0004] In order to prevent this, there is known a technique for keeping a clock running with a backup power source even during a power outage, so that the clock will not go wrong even if the power outage occurs for a short period of time (several minutes).

Id. ¶¶ 3–4.

“When a power outage occurs, the time data pertaining to the current time is stored in E2PROM 2, and when power is restored, the time data is read from E2PROM 2, and the time is resumed from the current time

corresponding to the retrieved time data.” *Id.* ¶ 61. “The timekeeping means resumes timekeeping from the time corresponding to the read time data.” *Id.* ¶ 15.

This illustrated by Shigeaki’s Figure 2, which is reproduced below.

[FIG. 2]

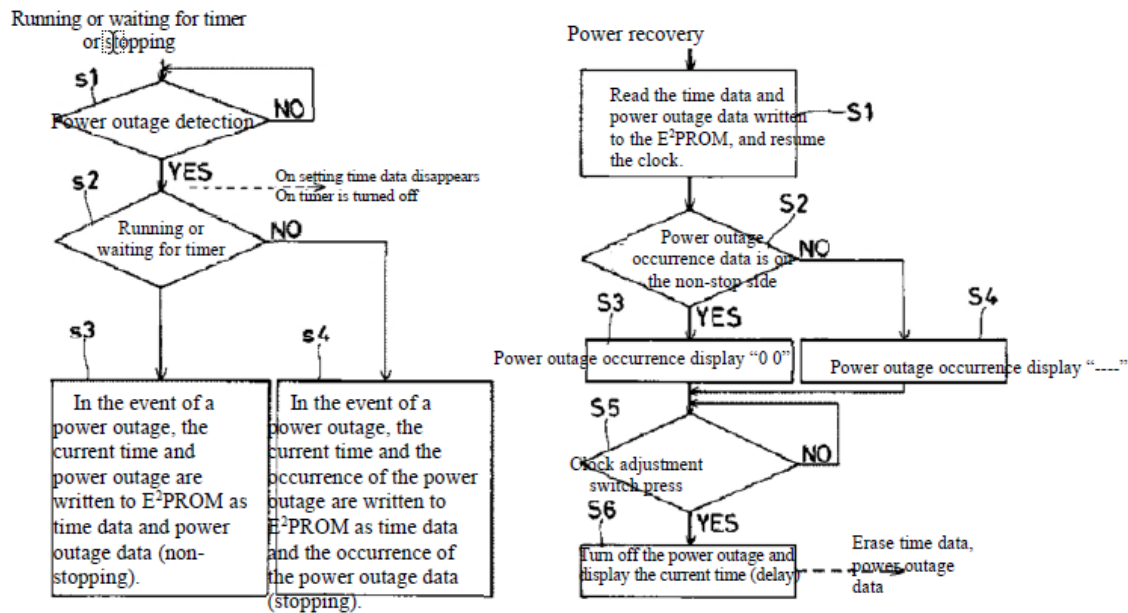


Figure 2 depicts a flowchart showing the clock device’s operation. *Id.* ¶ 64.

4. Analysis

Petitioner contends that a POSITA would have been motivated to combine Shamoon and Cacciatore and that the combination of Shamoon and Cacciatore teaches all of the limitations of claim 1, except for the limitations related to the real time clock. Pet. 48–60. The Petition provides a detailed analysis, supported by citations to the references and the testimony of Dr. Baker. *Id.* At this stage of the proceeding, Patent Owner does not dispute that Shamoon and Cacciatore and teach these limitations. Prelim. Resp. 32–35. After reviewing the Petition, we determine that Petitioner evidence and

analysis sufficiently show that the combination of Shamoon and Cacciatore teaches these limitations.

Patent Owner disputes that the following limitations are taught by the combination of Shamoon and Shigeaki. Prelim. Resp. 28–31. Claim 1 recites:

- 6) a control program stored in said first memory directing:
 - a) said real time clock to periodically read its current time and date information into said non-volatile memory; and
 - b) upon restart after a loss and then return of power from said space conditioning equipment, read the time and date information stored in said non-volatile memory into said real time clock.

Ex. 1001, 7:12–20. According to Patent Owner, neither Shamoon nor Shigeaki teach “a control program stored in a first memory, which directs a real-time clock to periodically retrieve its current time and date information and store it in non-volatile memory.” Prelim. Resp. 30–31.

Patent Owner’s argument is unpersuasive because it does not address the combined teachings of Shamoon and Shigeaki. Petitioner contends that the combination of Shamoon and Shigeaki teach these limitations. Pet. 61–62. According to Petitioner, Shamoon discloses a microcontroller 300 that runs program to control its thermostat and the microprocessor has a first memory. Pet. 57–58 (citing Ex. 1008 ¶ 60; Ex. 1002 ¶ 263; Ex. 1013, 101:6–20, 121:14–22). Petitioner argues that Shigeaki discloses a non-volatile memory, which has a well-known purpose of retaining the contents of the memory even when no power is supplied to the memory. Pet. 60 (citing Ex. 1002 ¶¶ 278; Ex. 1013, 103:4–25). Shigeaki teaches storing the current time in non-volatile memory, so that if a power outage occurs, the

time can be reset by reading the time data from the non-volatile memory. Ex. 1006 ¶¶ 7, 8, 13, 14. Petitioner contends that, “[a] POSITA would understand that these steps occur due to action by a control program (or that is at least obvious) because a microprocessor running a control program typically causes data to be stored into memory and read from 62 memory.” Ex. 1002 ¶285. Petitioner argues that a POSITA would be motivated to use Shigeaki’s clock device in a thermostat because “(1) less time and effort to adjust the clock after a power outage and (2) saving the cost of a backup battery.” Pet. 21 (citing Ex. 1006 ¶¶ 25–26, 63; Ex. 1002 ¶116). On this record, we are persuaded by Petitioner’s evidence and analysis that the combination of Shamoon and Shigeaki teaches a control program stored in a first memory that directs the storage of time and date information in a non-volatile memory for restarting a clock after a power outage as recited in claim 1.

After considering Petitioner’s evidence and analysis, and taking into account Patent Owner’s arguments, based on the record before us at this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood that claim 1 is unpatentable over Shamoon, Cacciatore, and Shigeaki.

F. Unpatentability Based on Shamoon, Cacciatore, Shigeaki, and Toth

Petitioner contends that the additional limitation of dependent claim 4 is unpatentable over Shamoon, Cacciatore, Shigeaki, and Toth. Pet. 32–33. At this stage of the proceeding, Patent Owner does not dispute that the combination of Inoue, Peters, and weather.com describes the additional limitations. Prelim. Resp. 32. After considering Petitioner’s evidence and

analysis, based on the record before us at this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood that claim 4 is unpatentable over Shamoon, Cacciatore, Shigeaki, and Toth.

G. Unpatentability Based on Shamoon, Cacciatore, and Carey

1. Summary of Carey

Carey is a U.S. patent application publication, titled “Thermostat with One Button Programming Feature,” and was filed on February 18, 2003 and published on July 3, 2003. Ex. 1007, code (22), (43), (54). Petitioner contends that Carey is prior art at least under 35 U.S.C. §§ 102(a) and (e). Pet. 15.

Carey discloses a “digital programmable thermostat” “that can automatically set the current time and date.” Ex. 1007, Abst., ¶ 4. Carey sets the time and date using information broadcasted by station WWVB, which is operated by the National Institute of Standards and Technology. *Id.* ¶¶ 4, 8.

Figure 2 of Carey is reproduced below.

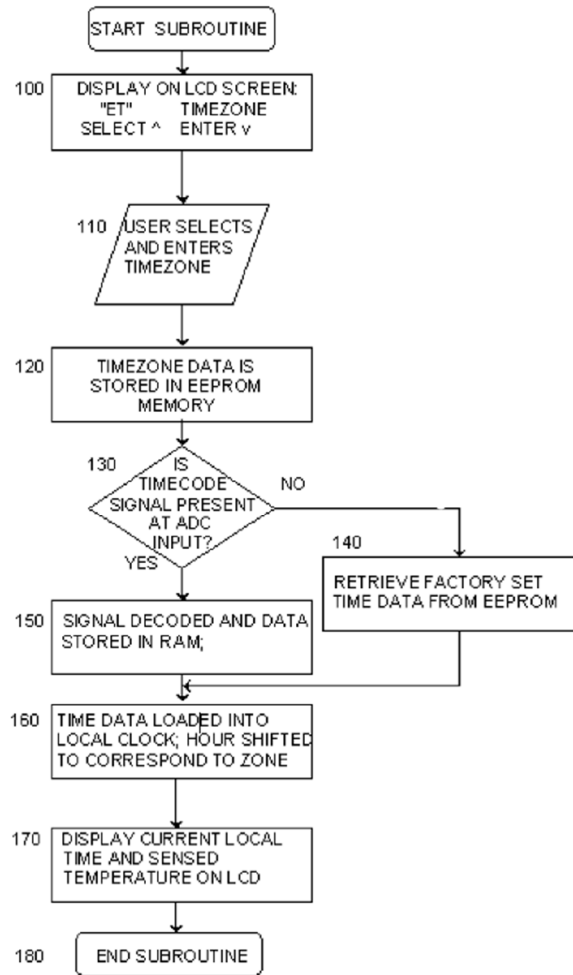


FIG. 2

Figure 2 is a flow chart that depicts a program for setting the time of the thermostat at initial start up or after a loss of power. *Id.* ¶¶ 5, 9. At steps 130 and 150, Carey's antenna 22 receives the signal from station WWVB and receiver integrated circuit 24 detects and amplifies the time code signal. Ex. 1007 ¶¶ 8–9. The received time signal is also stored in RAM memory at step 150 and then loaded into the clock by microprocessor 20 at step 160. *Id.*

2. *Claim 11*

Petitioner contends that a POSITA would have been motivated to combine Shamoon and Cacciatore and that the combination of Shamoon and Cacciatore teaches all of the limitations of claim 11, except for the receiver limitation. Pet. 65–66 (citing Ex. 1002 ¶¶ 127–134, 181). The Petition provides a detailed analysis, supported by citations to the references and the testimony of Dr. Baker. Pet. 65–66; *see also id.* at 53–60 (providing a detailed analysis). At this stage of the proceeding, Patent Owner does not dispute that Shamoon and Cacciatore teach these limitations. Prelim. Resp. 32–35. After reviewing the Petition, we determine that Petitioner evidence and analysis sufficiently show that the combination of Shamoon and Cacciatore teaches these limitations.

Patent Owner disputes that the following limitation is taught by the combination of Shamoon and Carey. Prelim. Resp. 36–37; Prelim. Sur-reply 2–3. Claim 11 recites:

D) a processor, said processor including:

...

5) a receiver adapted to receive current time and date information from an external source of the current time and date, said receiver being coupled to said real time clock such that the time and date information thereof is updated from said receiver.

Ex. 1001, 8:13–28.

Petitioner contends that the combination of Shamoon and Carey teaches this limitation. Pet. 66 (citing Ex. 1002 ¶¶ 299–301). According to Petitioner, Shamoon’s thermostat has a built-in clock. Pet. 60, 66 (citing Ex. 1008 ¶¶ 74, 59, Fig. 2). Petitioner asserts that Carey discloses a thermostat that automatically sets the current time and date using broadcast information

from station WWVB. Pet. 34 (citing Ex. 1007 ¶ 4), 66. Petitioner argues that it would have been obvious to a POSITA to combine Carey's receiver with Shamoon's thermostat because it

would merely involve the simple addition of a known element (the receiver integrated circuit of *Carey*) for a disclosed and generally known function (synchronizing time information) to obtain predictable results (a thermostat system with a receiver adapted to receive current time and date information from an external source to update the time and date of the thermostat system).

Pet. 66–67 (citing Ex. 1002 ¶ 302). Petitioner also argues that a POSITA would have been motivated to make the combination in order to keep the thermostat's time accurate and to easily set the time. Pet. 67–68 (citing Ex. 1002 ¶¶ 304–306; Ex. 1007 ¶ 1).

According to Patent Owner, claim 11 requires that the receiver and the clock be directly coupled to each other and none of the prior art discloses such. Prelim. Resp. 36–37; Prelim. Sur-reply 2–3. Patent Owner argues that Carey's receiver is not directly coupled to the clock because Carey stores the time in RAM memory first and then transfers the time to the clock. Prelim. Resp. 36 (citing Ex. 1007 ¶ 9).

Patent Owner's argument is unpersuasive. As Petitioner points out, the plain language of claim 11 does not require the receiver to be directly coupled to the real time clock. Prelim. Reply 6. The plain language of claim 11 only requires the coupling be such that the time and date information is updated from the receiver. Ex. 1001, 8:13–28. At this stage of the proceeding, Patent Owner does not provide any sufficient reason as to why the claim requires the receiver to be directly coupled to the real time clock.

Petitioner annotated Carey's Figure 1 to show how this limitation is met. Reproduced below is Carey's Figure 1, annotated by Petitioner. Pet. 36.

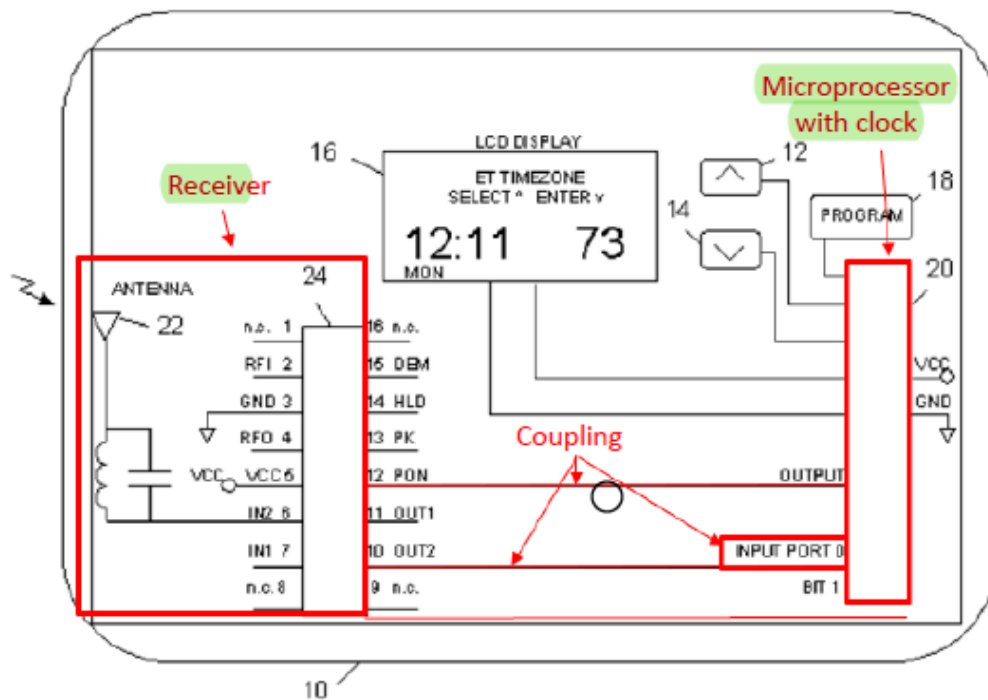


FIG. 1

EX1007, Figure 1 (annotated).

Annotated Figure 1 depicts a schematic representation of Carey's thermostat. Ex. 1007 ¶ 5. Petitioner highlights in red the coupling between receiver integrated circuit 24 and microprocessor 20. Carey's receiver integrated circuit 24 detects and amplifies the time code signal received by antenna 22 received from station WWVB. Ex. 1007 ¶¶ 8–9. Microprocessor 20 stores the time signal in RAM memory by and then loads it into the clock. *Id.*

Patent Owner also argues that Carey's RAM is a volatile memory and claim 11 requires non-volatile memory. Prelim. Resp. 36. Patent Owner's

argument is unpersuasive because, as Petitioner points out (Prelim. Reply 6–7), claim 1 does not require the memory to be non-volatile. Ex. 1001, 8:3–28.

After considering Petitioner’s evidence and analysis, and taking into account Patent Owner’s arguments, based on the record before us at this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood that claim 11 is unpatentable over Shamoon, Cacciatore, and Carey.

3. Claim 12

Petitioner contends that the additional limitation of dependent claim 12 is unpatentable over Shamoon, Cacciatore, and Carey. Pet. 69. At this stage of the proceeding, Patent Owner does not dispute that the combination of Shamoon, Cacciatore, and Carey discloses the additional limitations. Prelim. Resp. 37. After considering Petitioner’s evidence and analysis, based on the record before us at this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood that claim 12 is unpatentable over Shamoon, Cacciatore, and Carey.

H. Unpatentability Based on Shamoon, Cacciatore, Carey, and Toth

Petitioner contends that the additional limitations of dependent claims 13 and 16 are unpatentable over Shamoon, Cacciatore, Carey, and Toth. Pet. 69–70. At this stage of the proceeding, Patent Owner does not dispute that the combination of Shamoon, Cacciatore, Carey, and Toth discloses the additional limitations. Prelim. Resp. 38. After considering Petitioner’s evidence and analysis, based on the record before us at this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood

that claims 2, 3, and 6–9 are unpatentable over Shamoon, Cacciatore, Carey, and Toth.

I. Unpatentability Based on Shamoon, Cacciatore, and Williamson

1. Summary of Williamson

Williamson is a U.S. patent titled “Intelligent Microwave Oven,” was filed May 2, 2003, and published on March 25, 2004. Ex. 1010, code (22), (45), (54). Petitioner contends that Williamson is prior art at least under pre-AIA 35 U.S.C. §§ 102(a) and (e). Pet. 18.

Williamson discloses the need for easily setting and resetting clocks on household appliances. Ex. 1010, 1:44–53. Intelligent controller 102 has a modem 206, memory 208, and real time clock 308. *Id.* at 7:18–21. Intelligent controller 102 sets a clock by modem 206 receiving the correct time over the Internet. *Id.* at 8:36–51. Williamson “[keeps] a real-time clock synchronized and correctly set by receiving period time synchronization messages.” *Id.* at Abst., 4:36–37.

2. Claim 11

As for the ground based on Shamoon, Cacciatore, and Carey, Petitioner contends that a POSITA would have been motivated to combine Shamoon and Cacciatore and that the combination of Shamoon and Cacciatore teaches all of the limitations of claim 11, except for the receiver limitation. Pet. 70 (citing Ex. 1002 ¶ 317). The Petition provides a detailed analysis, supported by citations to the references and the testimony of Dr. Baker. Pet. 53–60 (providing a detailed analysis). At this stage of the proceeding, Patent Owner does not dispute that Shamoon and Cacciatore and teach these limitations. *See* Prelim. Resp. 38–43. After reviewing the

Petition, we determine that Petitioner evidence and analysis sufficiently show that the combination of Shamoon and Cacciatore teaches these limitations.

Patent Owner disputes that the following limitation is taught by the combination of Shamoon and Williamson. Prelim. Resp. 40–43. Claim 11 recites:

D) a processor, said processor including:

...

5) a receiver adapted to receive current time and date information from an external source of the current time and date, said receiver being coupled to said real time clock such that the time and date information thereof is updated from said receiver.

Ex. 1001, 8:13–28.

Petitioner contends that the combination of Shamoon and Williamson teaches this receiver limitation. Pet. 66 (citing Ex. 1002 ¶¶ 299–301). According to Petitioner, Shamoon’s thermostat has a built-in clock. Pet. 70 (citing Ex. 1008 ¶ 74; Ex. 1002 ¶ 319). Petitioner asserts that Williamson discloses appliances on a network, having a modem that receive time messages from a web server, so that all appliances’ clocks are synchronized automatically. Pet. 41 (citing Ex. 1010, 1:16–19, 2:8–13, 4:4–6, 4:37–40). Petitioner argues that it would have been obvious to a POSITA to combine Shamoon’s thermostat with Williamson’s intelligent controller because it

would merely involve the simple addition of a known element (the Internet service provider connection, e.g. the cable modem or DSL router of *Williamson*) for a generally known function (receiving time information) to obtain predictable results (a thermostat system updating time using an Internet reference).

Pet. 71 (citing Ex. 1002 ¶ 320). Petitioner also argues that a POSITA would have been motivated to make the combination in order to keep the thermostat's time. Pet. 71–72 (citing Ex. 1002 ¶¶ 322–323; Ex. 1010, 2:13).

According to Patent Owner, claim 11 requires that the receiver and the clock be directly coupled to each and none of the prior art discloses such. Prelim. Resp. 40–43; Prelim. Sur-reply 2–3. Patent Owner argues that Williamson's modem 206 (i.e., receiver) is not directly couple to real time clock 308 because modem 206 transfers the time information to controller 210. Resp. 42 (citing Ex. 1010).

Patent Owner's argument is unpersuasive. As Petitioner points out, the plain language of claim 11 does not require the receiver to be directly coupled to the real time clock. Prelim. Reply 6. The plain language of claim 11 only requires the coupling be such that the time and date information is updated from the receiver. Ex. 1001, 8:13–28. At this stage of the proceeding, Patent Owner does not provide any sufficient reason as to why the claim requires the receiver to be directly coupled to the real time clock.

Petitioner annotated Williamson's Figure 3 to show how this limitation is met. Reproduced below is Williamson's Figure 3, annotated by Petitioner. Pet. 43.

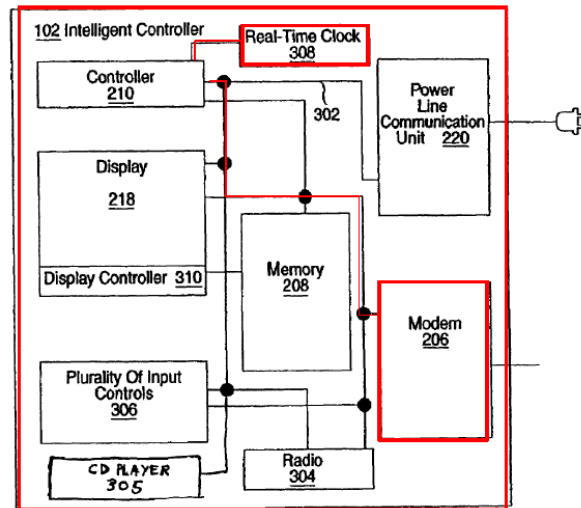


Fig. 3

Annotated Figure 3 depicts a block diagram of Williamson's intelligent controller. Ex. 1010, 3:21–22. Petitioner highlights in red the coupling between modem 206 and real-time clock 308.

Patent Owner also argues that Williamson's memory 208 is not non-volatile memory. Prelim. Resp. 42. Patent Owner's argument is unpersuasive because, as Petitioner points out (Prelim. Reply 6–7), claim 1 does not require the memory to be non-volatile. Ex. 1001, 8:3–28.

After considering Petitioner's evidence and analysis, and taking into account Patent Owner's arguments, based on the record before us at this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood that claim 11 is unpatentable over Shamoan, Cacciatore, and Williamson.

3. *Claim 14*

Petitioner contends that the additional limitations of dependent claim 14 are unpatentable over Shamoon, Cacciatore, and Williamson. Pet. 72–73. At this stage of the proceeding, Patent Owner does not dispute that the combination of Shamoon, Cacciatore, and Williamson discloses the additional limitations. Prelim. Resp. 43. After considering Petitioner’s evidence and analysis, based on the record before us at this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood that claim 14 is unpatentable over Shamoon, Cacciatore, and Williamson.

J. *Unpatentability Based on Shamoon, Cacciatore, Williamson, and Toth*

Petitioner contends that the additional limitations of dependent claims 15 and 16 are unpatentable over Shamoon, Cacciatore, Williamson, and Toth. Pet. 73. At this stage of the proceeding, Patent Owner does not dispute that the combination of Shamoon, Cacciatore, Williamson, and Toth discloses the additional limitations. Prelim. Resp. 43. After considering Petitioner’s evidence and analysis, based on the record before us at this stage of the proceeding, we determine that Petitioner has shown a reasonable likelihood that claims 15 and 16 are unpatentable over Shamoon, Cacciatore, Williamson, and Toth.

III. CONCLUSION

After considering the evidence and arguments presented in the Petition, Preliminary Response, Reply, and Sur-reply, we determine that the information presented shows a reasonable likelihood that Petitioner would

prevail in establishing that at least one of claims 1, 4, and 11–16 are unpatentable. Accordingly, we institute an *inter partes* review on all grounds of unpatentability in the Petition. At this stage of the proceeding, we have not made a final determination with respect to the patentability of any of the challenged claims.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted for claims 1, 4, and 11–16 of the '825 patent on the unpatentability grounds asserted in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this decision.

IPR2023-00718
Patent 7,185,825 B2

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