

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

WEBASTO ROOF SYSTEMS, INC.,
Petitioner,

v.

UUSI, LLC,
Patent Owner.

Case IPR2014-00649
Patent 7,548,037 B2

Before GLENN J. PERRY, HYUN J. JUNG, and JASON J. CHUNG,
Administrative Patent Judges.

JUNG, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Webasto Roof Systems, Inc. (“Petitioner”) filed a corrected Petition (Paper 4, “Pet.”) requesting an *inter partes* review of claims 1, 7, and 13 of U.S. Patent No. 7,548,037 B2 (Ex. 1003, “the ’037 patent”) pursuant to 35 U.S.C. §§ 311–319. UUSI, LLC (“Patent Owner”) filed a Preliminary Response. Paper 10. Based on these submissions, we instituted *inter partes* review of claims 1, 7, and 13. Paper 13 (“Dec. on Inst.”).

After institution, Patent Owner filed a Response (Paper 18, “PO Resp.”), and Petitioner filed a Reply (Paper 22, “Reply”). Petitioner proffered a Declaration of Francesco Borrelli, Ph.D. (Ex. 1001, “Borelli Declaration” or “Borrelli Decl.”) with its Petition and a Reply Declaration of Francesco Borrelli, Ph.D. (Ex. 1023, “Reply Decl.”) with its Reply. Patent Owner proffered the Declaration of Mark Ehsani, Ph.D. (Ex. 2003, “Ehsani Declaration” or “Ehsani Decl.”) with its Response. Also, deposition transcripts were filed for Dr. Ehsani (Exs. 1024–1031) and for Dr. Borrelli (Exs. 2005–2008, 2018). Patent Owner moves to exclude the Reply Declaration of Dr. Borrelli (Paper 23), and Petitioner moves to exclude portions of the Ehsani Declaration and Exhibits 2011, 2012, 2019, 2021, and 2014 (Paper 25).

A combined oral hearing in this proceeding and Cases IPR2014-00648 and IPR2014-00650 was held on June 29, 2015; a transcript of the hearing is included in the record (Paper 32).

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a

preponderance of the evidence that claims 1, 7, and 13 of the '037 patent are unpatentable. We also dismiss the motions to exclude as moot.

A. Asserted Grounds of Unpatentability

We instituted the instant *inter partes* review on the following grounds of unpatentability.

Reference[s]	Basis	Challenged Claim[s]
Bernard ¹	§ 102(b)	7 and 13
Bernard and Chikaraishi ²	§ 103(a)	1

Dec. on Inst. 15.

B. Related Proceedings

The parties state that the '037 patent is asserted in the following district court proceedings:

1. *UUSI, LLC v. Robert Bosch LLC*, No. 2:13-cv-10444 (E.D. Mich.), filed February 4, 2013. *See* Pet. 1; Paper 8, 2.
2. *UUSI, LLC v. Webasto Roof Sys., Inc.*, No. 2:13-cv-11704 (E.D. Mich.), filed April 15, 2013. *See id.*

The '037 patent belongs to a family of patents involved in multiple *inter partes* reviews including IPR2014-00416, IPR2014-00417, IPR2014-00648, and IPR2014-00650.

¹ U.K. Published Patent Application GB 2 026 723 A, published Feb. 6, 1980 (Ex. 1009, “Bernard”).

² U.S. Patent No. 3,888,047, issued June 10, 1975 (Exhibit 1015, “Chikaraishi”).

II. THE '037 PATENT (Ex. 1003)

The '037 patent describes a “method for sensing both hard and soft obstructions for a movable panel such as a sunroof.” Ex. 1003, Abstract. Figure 1 of '037 patent is reproduced below.

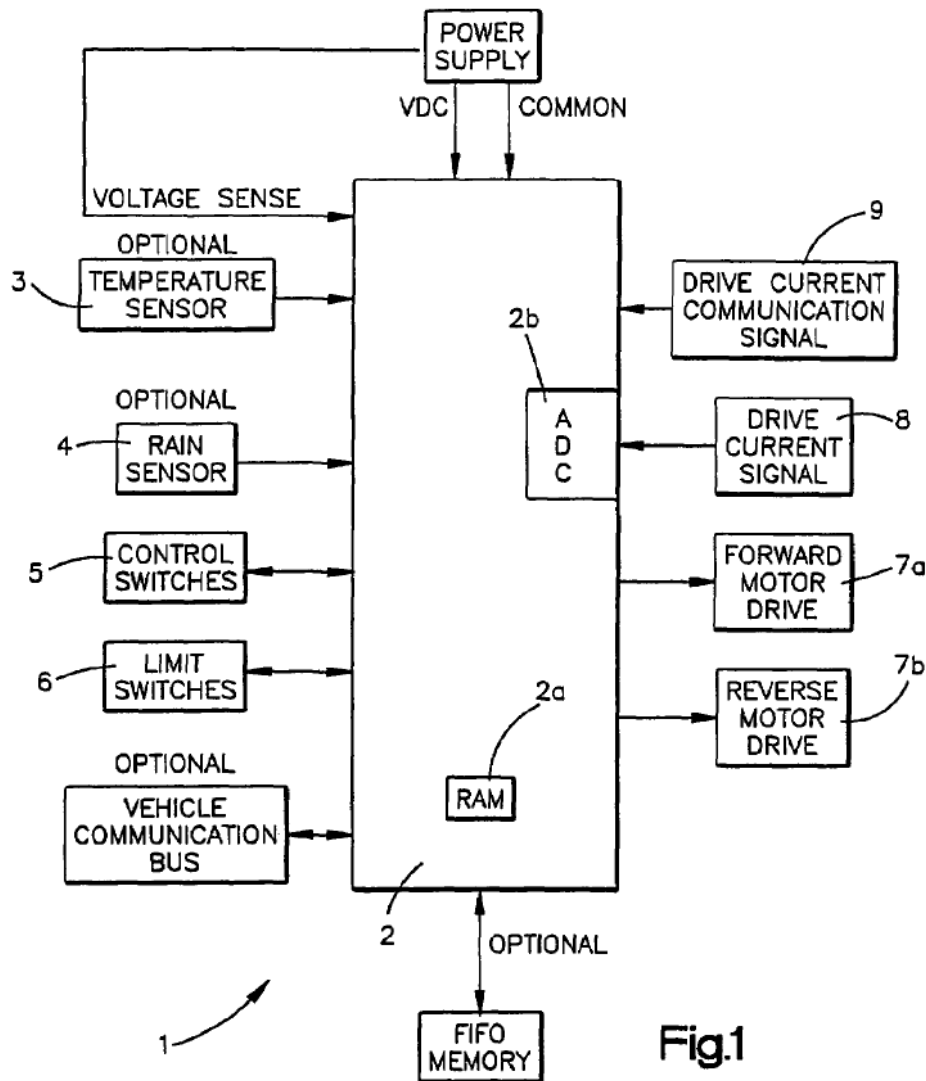


Figure 1 is a block diagram of an actuator safety feedback control system 1. Ex. 1003, 2:24–25, 2:63–65. Controller 2 monitors and controls movement of a motor driven panel. *Id.* at 2:66–3:5. Controller 2 can determine a stalled motor condition representing an obstacle. *Id.* at 7:59–67.

Obstruction detection is “based upon weighted factors of the history of the running measurements and running calculations.” *Id.* at 18:10–13. Obstacle detection can be based upon measurements of motor current, motor speed, motor current sensing, current sensing, and speed sensing. *Id.* at 4:12–14, 18:32–34, 18:37–38. Motor operation parameter history can be represented by ranges of data comprising motor current commutation pulses. *Id.* at 19:7–10. Weighted averages are calculated from shorter and longer ranges of data. *Id.* at 19:65–67. The weighted averages can reveal trends in recent motor operating parameter history. *Id.* at 21:40–42. If a most recent, calculated running motor current I_{R0} is greater than a sum that includes calculated currents as measured over different ranges, each multiplied by a factor K and other terms, also multiplied by factors, then an obstacle has been detected. *See id.* at 18:56–57, 19:9–10, 22:32–35.

Challenged claims 1, 7, and 13 are independent, and each recites a method. Claim 1 is representative:

1. A method for detecting the presence of an object caught between a closure and its respective frame of a power system comprising:

- providing a closure for opening and closing via a regulator driven by an electric drive motor controlled by a control circuit;

- calculating a predicted variable parameter value utilizing a system equation, said system equation including a number of coefficients which are multiplied by a number of different parameter values measured over a period of time, such that said predicted variable parameter value for any one of a series of different times is based upon a plurality of measured parameter values measured over a period of time;

sensing a variable parameter value of the power system during closing of the closure;

comparing said sensed variable parameter value to a previously predicted variable parameter value based upon a presumption of how said predicted variable parameter value would behave without the presence of an object; and

detecting an object caught between the closure and its respective frame based on the result of the compared parameter values.

III. ANALYSIS

A. Claim Construction

Patent Owner states that the '037 patent has expired. PO Resp. 14. We, thus, construe its claims in a manner similar to that of a district court, as articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316, 1327 (Fed. Cir. 2005) (en banc). *In re Rambus Inc.*, 694 F.3d 42, 46 (Fed. Cir. 2012) (“[T]he Board’s review of the claims of an expired patent is similar to that of a district court’s review.”).

Also, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire patent disclosure. *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365–66 (Fed. Cir. 2012). We construe the terms below in accordance with that standard.

In the Decision on Institution, we interpreted various claim terms of the '037 patent as follows:

Term	Interpretation
“regulator”	“mechanism for controlling the opening and closing of a closure”

Term	Interpretation
“predicted variable parameter value”	“threshold value for a ‘variable parameter value’ that is sensed in a sensing step that indicates the presence of an object”
“system equation including a number of coefficients which are multiplied by a number of different parameter values measured over a period of time”	“equation having two or more prior parameter values sequentially measured at a number of different times, each multiplied by a coefficient”

See Dec. on Inst. 7–10. Patent Owner contends that interpretation of these terms (1) is not necessary, (2) is irrelevant to determining patentability of the challenged claims, (3) is not relied upon by Patent Owner in its arguments, and (4) is sought by Petitioner for litigation-related reasons. PO Resp. 46–49. Petitioner does not dispute these interpretations.

We do not perceive any reason or evidence that now compels any deviation from these interpretations. Accordingly, for purposes of this decision, we incorporate our previous analysis. See Dec. on Inst. 7–10.

1. “*different parameter values*” (claim 1)

Claim 1 recites a method that comprises “calculating a predicted variable parameter value utilizing a system equation, said system equation including a number of coefficients which are multiplied by a number of different parameter values measured over a period of time.” Ex. 1003 at 27:37–41.

Patent Owner contends that “the correct interpretation of the phrase ‘different parameter values’ is values of two or more different kinds of

parameters.” PO Resp. 25 (emphasis omitted). Patent Owner contends that “‘different parameter values’ is susceptible to different interpretations.” *Id.* at 23 (citing Ehsani Decl. ¶ 60). Patent Owner consequently cites the prosecution history and the Specification of the ’037 patent to support its construction. *Id.* at 25–28 (citing Ex. 1003, 15:28–30, 18:36–37, 18:39–19:6, 22:31–35, 22:52–53; Ex. 1004 at 384, 388, 484–498, 585–779). Patent Owner also argues that it “has essentially disclaimed the interpretation that ‘different parameter values’ means different values of a single parameter (e.g., different values . . . of a single parameter: current (I)).” *Id.* at 29. Patent Owner, thus, argues that “different parameter values” should be construed as “values of two or more different kinds of parameters (e.g., current (I) and pulse period (PP)).” *Id.* at 30.

Petitioner replies that “the most reasonable interpretation based on the intrinsic record” is “‘values of at least one parameter at different times.’” Reply 5 (citing Reply Decl. ¶ 22). Petitioner argues that Patent Owner’s proposed construction is “inconsistent with the claim language and the relevant statements in the prosecution history.” Petitioner contends that “‘different parameter values’ appear only in the claims,” “the claim language itself strongly suggests that the ‘parameter values’ are ‘different in the sense that they are obtained at different times,’ and “[n]othing in the claim language suggests that distinct parameters are required.” *Id.* at 6 (citing Reply Decl. ¶ 23). Petitioner also cites prosecution history to argue that “different parameter values measured over a period of time” can be “values of a single parameter taken at different times.” *Id.* at 6–7 (citing Ex. 1004, 386–388, 598–601; Reply Decl. ¶¶ 25–27, 29). Petitioner contends that Patent Owner cites statements from prosecution history that “merely

establish that ‘different parameter values’ *can* include both current and pulse period” but fails to cite a statement that “*excludes* values of current or pulse period *alone* from satisfying the claim term.” *Id.* at 7–8 (citing Ex. 1004, 388; Reply Decl. ¶¶ 28, 30, 31–34). Petitioner further cites the patent from which the claim language was copied to provoke an interference to argue that “different parameter values” can be “values of at least one parameter at different times.” *Id.* at 8–9 (citing Ex. 1004, 263–68, 270, 277–78; Ex. 1005, 2:59–60, 2:20–22, 2:30–36, 4:32–33; Reply Decl. ¶¶ 35–39).

The record before us does not present a clear disavowal in the prosecution history that would limit the plain and ordinary meaning of the disputed term. Patent Owner cites to portions of the prosecution history of the ’037 patent that argues how the as-filed application provides support for the claimed subject matter. PO Resp. 25–28; Ex. 1004 at 384, 388, 484–498, 585–779. These cited portions do not discuss the scope of the claim language and do not indicate that Applicants intended to limit the claim language to the cited embodiments. *See* Ex. 1004 at 384, 388, 484–498, 585–779. Also, we decline to import into the claims a limitation based on specific embodiments in the Specification. *See, e.g., SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004) (“[A] particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.”).

Accordingly, based on the complete record before us, we construe “different parameter values” in accordance with its plain meaning. Our construction includes parameter values that are either values of a parameter measured at different times or values of two or more different kinds of parameters. Ex. 1003, 18:29–44.

2. “a power system” (claim 1)

Claim 1 recites “a closure and its respective frame of a power system” and “detecting an object caught between the closure and its respective frame.” Ex. 1003, 27:31–32, 27:53–54.

Patent Owner contends that “frame of a power system” which appears in the preamble and the body of claim 1 “is a positive claim limitation and not merely intended use.” PO Resp. 30. Patent Owner cites its declarant testimony to argue that “‘power system’ must include a ‘frame’ as a component thereof,” “the word ‘power’ must include a motor,” and “a person of ordinary skill in the art in April of 1992 would consider such a system to be a module or preassembled unit.” *Id.* at 31 (citing Ehsani Decl. ¶ 78). Patent Owner argues that “[c]laim 1 requires a power system comprising a module or preassembled unit with a frame, closure (e.g., window), and a drive motor.” *Id.* at 31–32 (citing Ex. 1003, 1:67–2:2, 2:63–3:3, 6:40–53, 13:24–25, 25:41–26:3, 26:46–52, Figs. 1, 2A–2D, 3C, claims 2, 19; Ehsani Decl. ¶ 80). Patent Owner, thus, argues that “power system includes a modularized or preassembled power unit having a frame, a closure, and a drive motor.”

Petitioner replies, and we agree, that “‘frame,’ ‘closure,’ and ‘drive motor’ are separately recited in claims 1 and 7, so it would be redundant to read them into the ‘power system.’” Reply 4. We also agree with Petitioner that “the additional requirement of ‘a modularized or preassembled’ has no basis in the intrinsic record; it is not mentioned in the ’037 patent.” *Id.* (citing Reply Decl. ¶ 17). Petitioner argues that “‘power system’ only appears in the claims,” that the “’037 patent ‘concerns motor driven actuator

control systems” and references a standard “that ‘establishes requirements for power window control systems,’” and that the “disclosure indicates that . . . ‘power system’ refers to a ‘motor driven system,’ *e.g.*, for use in a power window.” *Id.* (citing Ex. 1003, 1:24–26, 1:30–33; Reply Decl. ¶ 15), 16 (citing Reply Decl. ¶¶ 14–15).

Accordingly, based on the complete record before us, we construe “power system” in accordance with its plain meaning. Our construction does not require that power system be a modularized or preassembled power unit.

3. “*de-activating*” (*claim 13*)

Claim 13 recites a “method for controlling activation of a motor for moving a window or panel along a path of travel and *de-activating* the motor if an obstacle is encountered during movement of the window or panel along its path of travel.” Ex. 1003 at 28:46–49 (emphasis added).

After contending that construction of “de-activating” is not needed, Patent Owner asserts that “‘deactivating’ encompasses ‘not active, unmoving, immobile, inoperative’ in any manner, mechanical or electrical” in accordance with a dictionary definition. PO Resp. 48–49 (citing Ehsani Decl. ¶ 90; Ex. 2018, 5, 6).

We decline to adopt Patent Owner’s dictionary definition because the Specification of the ’037 patent disparages immediately reversing (without first deactivating) the motor in response to detecting an obstacle (Ex. 1003, 3:42–55), which may result in “motor plugging,” described as “unnecessary” and “undesirable” as causing “undesired motor heating,” is “detrimental to the life and reliability” and because it “can also cause undesirable transients, trip breakers, and blow fuses in a power supply system.” *Id.*

We construe the claim term “deactivating” to embrace any of turning off, removing power from, and stopping the motor. Our construction excludes immediate reversing of the motor without first turning off, removing power from, or stopping the motor. *See also* Dec. on Inst. 10 (construing “de-activating” to embrace any of turning off, removing power from, and stopping the motor).

4. “*sensing a value of the parameter*”(claim 13)

Claim 13 recites a “method for controlling activation of a motor for moving a window or panel along a path of travel and deactivating the motor if an obstacle is encountered” that comprises, *inter alia*, “measuring a parameter of the motor that varies in response to the window or panel encountering an obstacle while moving along its path of travel” and “*sensing a value of the parameter* during movement of the window or panel along its path of travel.” Ex. 1003, 28:46–53, 28:61–62 (emphasis added).

Patent Owner contends that “‘sensing a value of the parameter’ . . . must be construed to mean calculating an average value of past measurements of the parameter.” PO Resp. 15, 19. Patent Owner argues that, because claim 13 recites “measuring a parameter” before “sensing a value of the parameter,” the “term ‘sensing’ is not used . . . in the traditional sense and therefore must not be construed using its conventional plain meaning.” *Id.* at 15–16 (citing Ehsani Decl. ¶ 53). Patent Owner consequently cites the prosecution history of the ’037 patent to argue that the sensed parameter is I_{RO} or “the calculated running software-filtered value of prior sequential measured motor currents in range zero.” *Id.* at 18 (citing Ex. 1003, 18:56–57; Ex. 1004, 390, 591). Patent Owner also argues that its declarant testimony opines that “comparing the average value instead of a

single reading of the parameter to a threshold factors out false positives and reliably detects obstructions in the real world.” *Id.* (citing Ehsani Decl. ¶ 54). Patent Owner also states that its Declarant opines “as the patentee explicitly defined the term in the specification, ‘sensing a value of the parameter’ must be construed to mean calculating an average value of past measurements of the parameter.” *Id.* at 19 (citing Ehsani Decl. ¶ 54) (emphasis omitted).

Petitioner replies that “Patent Owner has not identified any clear attempt by the Applicants to deviate from the plain and ordinary meaning,” which is “detecting a value of the parameter using a sensor while the window or panel is moving along its travel path.” Reply 10 (citing Reply Decl. ¶ 43). Petitioner also argues that Patent Owner’s proposed construction of “sensing” for claim 13 would be different than its meaning in claims 1 and 7. *Id.* Petitioner further argues that the ’037 patent uses “sensing” to refer to sensing parameters values, not calculating an average. *Id.* (citing Ex. 1003, Abstract, 2:16–20, 2:26–44, 8:36–45, 11:5–27, 24:18–31; Reply Decl. ¶ 46). Petitioner further notes that Patent Owner’s citation to prosecution history omits an explanation of sensing that indicates the term is used in accordance with its ordinary meaning. *Id.* at 10–11 (citing Ex. 1003, 2:3–8; Ex. 1004 at 5, 591). Petitioner further contends that Patent Owner’s proposed construction conflicts with its position in its Preliminary Response. *Id.* at 11 (citing Prelim. Resp. 18). Petitioner further asserts that Patent Owner’s Declarant conceded that the portion of the ’037 patent cited for “sensing” in the Preliminary Response does not support Patent Owner’s proposed construction. *Id.* (citing Ex. 1025, 238:4–8, 239:5–240:21).

The record before us does not present a clear disavowal in the prosecution history that would limit the plain and ordinary meaning of “sensing a value of the parameter.” Patent Owner cites to portions of the prosecution history of the ’037 patent that argues how the as-filed application provides support for the claimed subject matter. PO Resp. 18–19; Ex. 1004, 390, 591. These cited portions do not discuss the scope of “sensing a value of the parameter” and do not indicate that Applicants intended to limit the disputed claim language to the cited embodiments. *See* Ex. 1004, 390, 591.

Accordingly, we construe “sensing a value of the parameter” in accordance with its plain meaning. Our construction is not limited to an average of past measurements of the parameter.

B. Challenges relying on Bernard (Ex. 1009)

To prevail in its challenges to claims 7 and 13 as anticipated by Bernard, Petitioner must prove unpatentability by a preponderance of the evidence. *See* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

In finding a claim anticipated, “[t]he identical invention must be shown in as complete detail as is contained in the patent claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989), *abrogated on other grounds as recognized by Robert Bosch LLC v. Pylon Mfg. Corp.*, 659 F.3d 1142, 1148 (Fed. Cir. 2011). Moreover, “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). A finding of inherency “requires that the missing descriptive material is ‘necessarily present,’ not merely probably or possibly present” in the anticipating

reference. *Trintec Indus., Inc. v. Top-USA Corp.*, 295 F.3d 1292, 1295 (Fed. Cir. 2002) (quoting *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999)).

Petitioner argues that Bernard anticipates claims 7 and 13, referring to Figure 4 of and disclosures in Bernard as well as claim charts and the Borrelli Declaration. Pet. 19–27.

1. *Bernard (Ex. 1009)*

Bernard describes control circuits for electric window winders for operating moving windows in vehicles. Ex. 1009, 1:4–6. Figure 4 of Bernard is reproduced below.

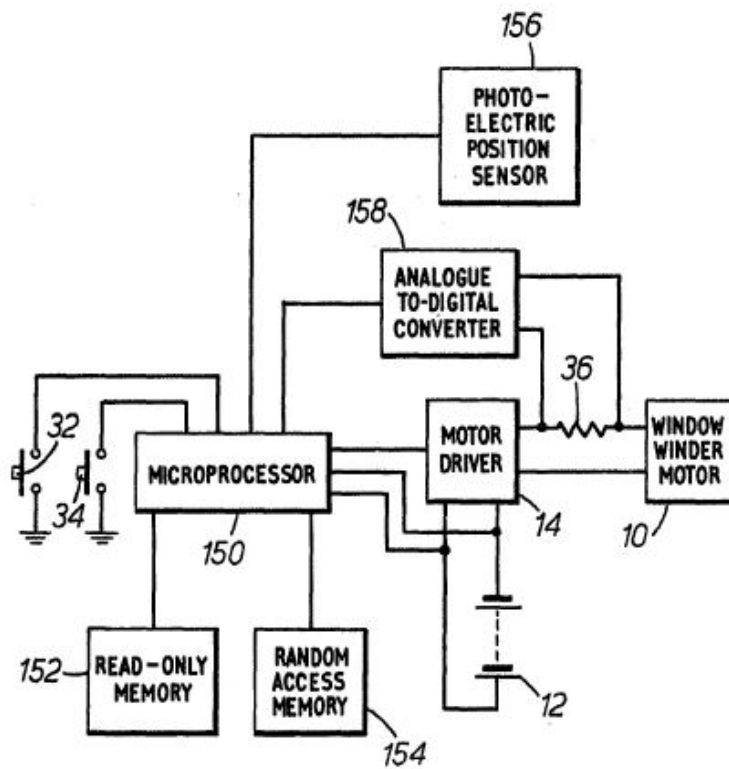


FIG. 4.

Figure 4 is a block diagram illustrating a circuit for controlling an electric window winder. *Id.* at 3:75–77. Bernard provides protection against injury by sensing an increase in motor current resulting from a window meeting an obstruction. It de-energizes window winder motor 10 if microprocessor 150 determines that a threshold value of motor current is exceeded. *Id.* at 1:111–118.

2. Claim 7

Independent claim 7 recites a “method for detecting the presence of an object caught between a closure and its respective frame of a *power system*,” that includes, *inter alia*, “calculating a variable parameter value utilizing a system equation, said system equation including a number of coefficients which are multiplied by a number of *different parameter values* measured over a period of time.” Ex. 1003, 28:5–28 (emphasis added).

Petitioner argues that Bernard discloses all the elements of claim 7. Pet. 20–25 (citing Ex. 1009, Abstract, 1:111–118, 1:21–30, 2:105–111, 3:92–100, 3:75–77, 4:1–7, 4:67–101, 6:56–82, 7:66–104, 9:22–32, Fig. 4; Borelli Decl. ¶¶ 55–60). Specifically, Petitioner argues that Bernard teaches the power system and calculating step of claim 7. *Id.* at 20–21 (citing Ex. 1009, Abstract, 1:111–118; Borrelli Decl. ¶¶ 55, 56), 22–23 (citing Ex. 1009, 2:105–111, 7:68–88; Borrelli Decl. ¶ 110).

Patent Owner responds that Bernard does not disclose “different parameter values,” a “power system,” and a “frame,” by referencing its arguments for claim 1. PO Resp. 42. In the referenced arguments, Patent Owner asserts that Bernard does not disclose detecting an obstacle based on a threshold calculated using a system equation with “different parameter values,” which Patent Owner proposes to interpret as values of two different

kinds of parameters. PO Resp. 33 (citing Ehsani Decl. ¶ 67). Patent Owner argues that Bernard, instead, discloses calculating its obstacle detection threshold based on measured motor current and that, although Bernard describes measuring torque, window position, and ambient temperature, those measurements are not used in calculating its obstacle detection threshold. *Id.* at 33–37 (citing Ex. 1009, 14:6–16, 17:18–19, 22:73–88, 25:15–17; Ehsani Decl. ¶¶ 66–68, 72, 73; Ex. 2005, 74:17–22, 83:10–17, 24).

Patent Owner also asserts that Bernard fails to disclose a modularized or preassembled power unit having a frame, closure and drive motor. PO Resp. 38. Specifically, Patent Owner argues that Bernard does not describe a window or sunroof with a frame and frameless windows were common at the time of filing the application for the '037 patent. PO Resp. 38–42 (citing Ex. 1009, 27:2–4; Ehsani Decl. ¶¶ 82, 84; Ex. 2005 at 26:5–9, 27:3–10, 84:14–22, 85:5–23).

Petitioner replies that Patent Owner's proposed construction of "different parameter values" and "power system" are incorrect, and that Bernard discloses claim 7 as properly construed. Reply 12 (citing PO Resp. 30, 42). Petitioner also argues that "Patent Owner concedes that Bernard . . . ' . . . is applicable to motorized sunroofs of cars,'" which would necessarily include a "frame." *Id.* at 12–13 (citing Ex. 1009, 1:4–6, 1:22–28; PO Resp. 38 (citing Ex. 1009, 12:2–4)). Petitioner also contends that Bernard necessarily discloses a "frame" because it discloses control circuits "so that a trapped finger, for example, is unlikely to be broken" and "there must be a frame against which the window can trap the finger." *Id.* at 13 (citing Ex. 1009, Abstract, 2:27–33; Reply Decl. ¶ 56). Petitioner further argues that

Patent Owner's Declarant "conceded that each reference he identified as an example of a 'frameless' window in fact disclosed a frame around the window." *Id.* (citing Ex. 1025, 272:5–273:3, 274:1–13, 275:9–16).

As explained above in Part III.A.1, our construction of "different parameter values" includes values of a parameter measured at different times and is not limited to values of two or more different kinds of parameters. Also, as discussed in Part III.A.2, our construction of "power system" does not require that it be a modularized or preassembled power unit or further include frame, closure, and drive motor, which are recited separately in claim 7.

Accordingly, based on the complete record before us, we determine that Petitioner, by a preponderance of the evidence, has shown that claim 7 is anticipated by Bernard.

3. Claim 13

Independent claim 13 recites a method that includes, *inter alia*, "sensing a value of the parameter during movement of the window or panel along its path of travel." Ex. 1003, 28:46–67.

Petitioner argues that Bernard discloses all the elements of claim 13. Pet. 25 (citing Ex. 1009, 1:111–118, 4:1–7, 4:67–101, 2:105–111, 6:56–82, 7:66–104, 9:22–32; Borrelli Decl. ¶¶ 114–118). In particular, for "sensing a value of the parameter during movement of the window or panel along its path of travel," Petitioner refers to its arguments for claim 7. *Id.* at 26–27. Petitioner argues that Bernard discloses a "current through the motor 10 is sensed by a low-value series resistor 36; the potential drop across the resistor 36 is monitored by a current sensor circuit 38, which provides an input

signal . . . on a line 42 if the current is drawing an abnormally high current.” *Id.* at 24 (citing Ex. 1009, 4:1–7, 4:67–101; Borrelli Decl. ¶ 111).

Patent Owner responds that Bernard “does not disclose sensing a value of the parameter as defined in the ’037 patent.” PO Resp. 19. Patent Owner argues that “Bernard merely detects an obstruction by comparing a sensed value of motor current (I) to a threshold value such as I_{FMAX} ,” thus, “Bernard merely senses an instantaneous value of the current (I) and not an average value of past measurements.” *Id.* at 19–20 (citing Ex. 1009, 22:105–110; Ehsani Decl. ¶ 55; Borrelli Dep. 79:9–19). Patent Owner asserts that the distinction was recognized by Petitioner’s Declarant (*id.* at 20–21 (citing Ex. 2005 at 79:9–19, 106:18–107:11)) and Patent Owner’s Declarant (*id.* at 20, 22 (citing Ehsani Decl. ¶¶ 56–57)).

Petitioner replies, and we agree, that “Patent Owner’s sole argument against anticipation rests on its improper interpretation . . . as requiring ‘calculating an average value of past measurements of the parameter’” and “Bernard anticipates claim 13 as properly construed.” Reply 12 (citing PO Resp. 19–22). As we determined above in Part III.A.4, our construction of “sensing a value of the parameter” is not limited to an average of past measurements of the parameter.

Accordingly, based on the complete record before us, we determine that Petitioner, by a preponderance of the evidence, has shown that claim 13 is anticipated by Bernard.

C. Challenge relying on Bernard (Ex. 1009) and Chikaraishi (Ex. 1015)

To prevail in its challenge of claim 1 as rendered obvious over Bernard and Chikaraishi, Petitioner must prove unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented 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. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). To establish obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *See CFMT, Inc. v. Yieldup Int’l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003); *In re Royka*, 490 F.2d 981, 985 (CCPA 1974).

A patent claim composed of several elements, however, is not proved obvious merely by demonstrating that each of its elements was known, independently, in the prior art. *KSR*, 550 U.S. at 418. For an obviousness analysis it is important to identify a reason that would have prompted one of skill in the art to combine prior art elements in the way the claimed invention does. *Id.* Obviousness can be established when the prior art, itself, would have suggested the claimed subject matter to a person of ordinary skill in the art. *In re Rinehart*, 531 F.2d 1048, 1051 (CCPA 1976).

1. *Chikaraishi (Ex. 1015)*

Chikaraishi “relates in general to window regulators.” Ex. 1015, 1:3–5. Figure 1 of Chikaraishi is reproduced below.

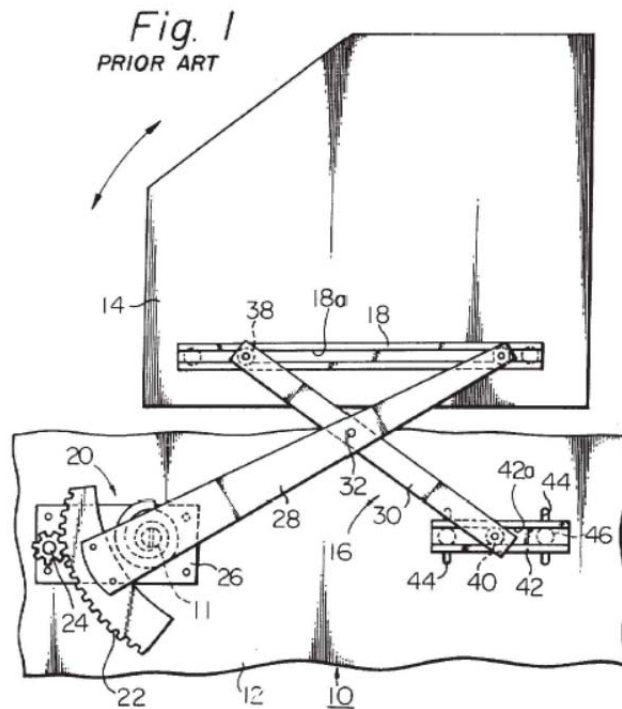


Figure 1 is a schematic view of a window regulator of a motor vehicle. *Id.* at 1:15–16. Chikaraishi describes that a “window pane 14 is disposed within the vehicle door body 10 and is moved upwards or downwards by means of a window regulator mechanism 16 within the vehicle body door 10.” *Id.* at 1:29–32.

2. Claim 1

Petitioner argues that claim 1 would have been rendered obvious by Bernard and Chikaraishi and states that “to the extent the Board believes a reference expressly disclosing the claimed ‘regulator’ . . . is necessary, Chikaraishi provides express disclosure.” Pet. 29 (citing Ex. 1015, 1:29–2:8).

Petitioner argues that a:

person of ordinary skill in the art would have been motivated to use a regulator such as that disclosed by Chikaraishi with the system of Bernard because Chikaraishi discloses the standard

use of a regulator to convert the rotary driving force from the electric drive motor to a linear force for opening and closing the closure.

Pet. 29 (citing Borrelli Decl. ¶ 122).

Patent Owner responds Bernard does not teach detecting an obstacle based on a threshold calculated using a system equation with “different parameter values,” specifically values of two different kinds of parameters. PO Resp. 33 (citing Ehsani Decl. ¶ 67). Patent Owner argues that, instead, Bernard teaches calculating its obstacle detection threshold based on measured motor current and that Bernard’s teachings of other measurements are not used in obstacle detection threshold calculation. *Id.* at 33–37 (citing Ex. 1009, 14:6–16, 17:18–19, 22:73–88, 25:15–17; Ehsani Decl. ¶¶ 66–68, 72, 73; Ex. 2005 at 74:17–22, 83:10–17, 24). Patent Owner further argues that Chikaraishi also fails to teach “different parameter values.” *Id.* at 37 (citing Ehsani Decl. ¶ 75).

Patent Owner also asserts that Bernard and Chikaraishi fail to teach a modularized or preassembled power unit having a frame, closure and drive motor. PO Resp. 38. Specifically, Patent Owner argues that Bernard does not teach a window or sunroof with a frame, Chikaraishi’s window pane 14 is not disposed in a module with a frame, and frameless windows were common at the time of filing the application for the ’037 patent. PO Resp. 38–42 (citing Ex. 1009, 27:2–4; Ex. 1015, 1:28–31, 2:9–13, Fig. 1; Ehsani Decl. ¶¶ 82, 84; Ex. 2005 at 26:5–9, 27:3–10, 84:14–22, 85:5–23).

As discussed above in Parts III.A.1 and III.A.2, our construction of “different parameter values” includes values of a parameter measured at different times and our construction of “power system” does not require that

it be a modularized or preassembled power unit or further include frame, closure, and drive motor, which are recited separately in claim 1.

Accordingly, based on the complete record before us, we determine that Petitioner, by a preponderance of the evidence, has shown that claim 1 is unpatentable over Bernard and Chikaraishi.

D. Additional Arguments

1. Declarant Not Familiar with the State of the Art

Patent Owner contends Dr. Borrelli did not have personal experience with the state of the art in 1992 at the time of filing and is not an expert in automotive vehicle window or sunroof movement mechanisms or their control systems. PO Resp. 5–13.

We are persuaded, however, that Dr. Borrelli is an expert in the field of control systems since before 1992. Ex. 1001 ¶¶ 5–18; Ex. 1002. Dr. Borrelli’s specific expertise is in constrained optimal control, model predictive control, and its application to advanced automotive control. Ex. 1001 ¶ 5. Accordingly, we conclude that Dr. Borrelli is an expert familiar with the State of the Art of automotive control in 1992.

2. Enablement of References

Patent Owner argues that “Bernard and Chikaraishi are not enabling . . . for making or using the inventions claimed in the ’037 Patent.” PO Resp. 43. Patent Owner contends that “the obstacle detection features of Bernard would not only require undue experimentation to make or use an invention, such as that of the ’037 Patent, but would also not reliably detect obstacles in real-world scenarios” because of the “inordinate amount of false positives or negatives that would occur with Bernard’s inaccurate algorithms” and Bernard “does not detect soft obstacles.” *Id.* at 43–44

(citing Ehsani Decl. ¶¶ 91–96; Ex. 2005, 39:21–40:12, 41:16–42:5)
(emphasis removed).

Other than alleged poor performance, Patent Owner has not identified any persuasive evidence that the references cited by Petitioner should not be relied upon for their respective disclosures.

Regarding the asserted ground under § 103, we have determined that Bernard and Chikaraishi provide sufficient disclosure to allow a person having ordinary skill in the art to make and use the invention recited in the challenged claim. *In re Antor Media Corp.*, 689 F.3d 1282, 1290 (Fed. Cir. 2012) (“Enablement of prior art requires that the reference teach a skilled artisan to make or carry out what it discloses in relation to the claimed invention. Even if a reference discloses an inoperative device, it is prior art for all that it teaches.” (quotation omitted) (citations omitted)); *Symbol Techs., Inc. v. Opticon, Inc.*, 935 F.2d 1569, 1578 (Fed. Cir. 1991) (“[A] non-enabling reference may qualify as prior art for the purpose of determining obviousness under § 103.”).

E. Motions to Exclude

Patent Owner seeks to exclude the entire Reply Declaration of Francisco Borrelli, Ph.D. (Ex. 1023) and any reliance on this declaration in the Reply. Paper 23, 1.

Petitioner seeks to exclude paragraphs 6, 48, 52–55, 58, 60–65, 74, 76, 78–81, 84–91, and 96 of the Ehsani Declaration (Ex. 2003) and Exhibits 2011, 2012, 2019, 2021, and 2014. Paper 25, 1.

We merely cite paragraphs 14, 15, 17, 23, 25–39, 43, and 46 of the Reply Declaration and paragraphs 53–55, 60, 78, 80, 82, 84, and 90 of the

Ehsani Declaration to indicate where the parties find support for their arguments.

In our analysis, we do not rely on any of the paragraphs that we cited or that the parties seek to exclude. Moreover, we do not rely on any of the other exhibits sought to be excluded. Accordingly, we dismiss the Motions as moot.

F. Conclusion

For the foregoing reasons, we are persuaded that Petitioner has demonstrated, by a preponderance of the evidence, that, under 35 U.S.C. § 102, claims 7 and 13 of the '037 patent are anticipated by Bernard and that, under 35 U.S.C. § 103, claim 1 of the '037 patent is unpatentable over Bernard and Chikaraishi.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1, 7, and 13 of the '037 patent have been shown, by a preponderance of the evidence, to be unpatentable;

FURTHER ORDERED that Patent Owner's Motion to Exclude is dismissed as moot;

FURTHER ORDERED that Petitioner's Motion to Exclude is dismissed as moot; and

FURTHER ORDERED that, because this is a Final Written Decision, the parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirement of 37 C.F.R. § 90.2.

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Patent 7,548,037 B2

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