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Paper No. 51
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DOUGLAS DYNAMICS, L.L.C.
and DOUGLAS DYNAMICS, INC.,
Petitioners,

v.

MEYER PRODUCTS LLC,
Patent Owner.

Case IPR2015-01839
Patent 6,265,829 B1

Before LORA M. GREEN, JONI Y. CHANG, and
JACQUELINE T. HARLOW, *Administrative Patent Judges.*

HARLOW, *Administrative Patent Judge.*

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

I. INTRODUCTION

Petitioners, Douglas Dynamics, L.L.C. and Douglas Dynamics, Inc. ("Douglas"), filed a Petition on August 31, 2015, requesting an *inter partes* review of the challenged claims of U.S. Patent No. 6,265,829 B1 (Ex. 1001, "the '829 patent"). Paper 1 ("Pet."). Patent Owner, Meyer Products LLC ("Meyer"), did not file a Preliminary Response. We determined that the information presented in the Petition demonstrated that there was a reasonable likelihood that Douglas would prevail with respect to at least one challenged claim. Pursuant to 35 U.S.C. § 314, we instituted trial on March 3, 2016, as to claims 1, 2, 4–8, 28–33, 36, 38, 39, 43, 44, and 48–54 of the '829 patent. Paper 9 ("Dec.").

After institution, Meyer filed a Patent Owner Response.[1] Paper 34 ("PO Resp."). Douglas filed a Reply to the Patent Owner Response. Paper 38 ("Pet. Reply").

Meyer also filed a Motion Requesting Certificate of Correction (Paper 22, "Mot. Correction"), seeking to correct certain claims of the '829 patent. Douglas filed an opposition (Paper 24, "Opp. Correction").

In addition, Douglas filed a Motion to Exclude (Paper 41, "Mot. Exclude") Exhibits 2001–2015, and 2018–2020 submitted by Meyer. Meyer filed an Opposition (Paper 44, "Opp. Exclude"), and Douglas filed a Reply

[1] Meyer filed an initial Patent Owner Response (Paper 32), and subsequently, a Corrected Patent Owner Response (Paper 34). This Decision refers to the Corrected Patent Owner Response.

(Paper 46, "Reply Exclude"). Oral Hearing was held on December 21, 2016.[2]

This final written decision is entered pursuant to 35 U.S.C. § 318(a). We have jurisdiction under 35 U.S.C. § 6.

We hold that Douglas has demonstrated by a preponderance of the evidence that claims 1, 2, 4–7, 28–31, 36, 38, 39, 43, and 44 are unpatentable under 35 U.S.C. § 103(a). We determine, however, that Douglas fails to demonstrate by a preponderance of the evidence that claims 8, 32, 33, and 48–54 are unpatentable. Meyer's Motion Requesting Certificate of Correction is *denied*. Douglas' Motion to Exclude is *dismissed*.

A. Related Matter

The '829 patent is asserted in *Meyer Products LLC v. Douglas Dynamics, L.L.C.*, No. 1:15-CV-900 (N.D. Ohio). Pet. 1.

B. The '829 Patent

The '829 patent describes an auxiliary multiplex vehicle light harness for connecting an auxiliary light to the original equipment manufacturer ("OEM") wiring of a vehicle. Ex. 1001, 4:66–5:2. The auxiliary multiplex vehicle light harness includes electrical connectors designed to connect to the original vehicle headlight and vehicle headlight power source wiring. *Id*.

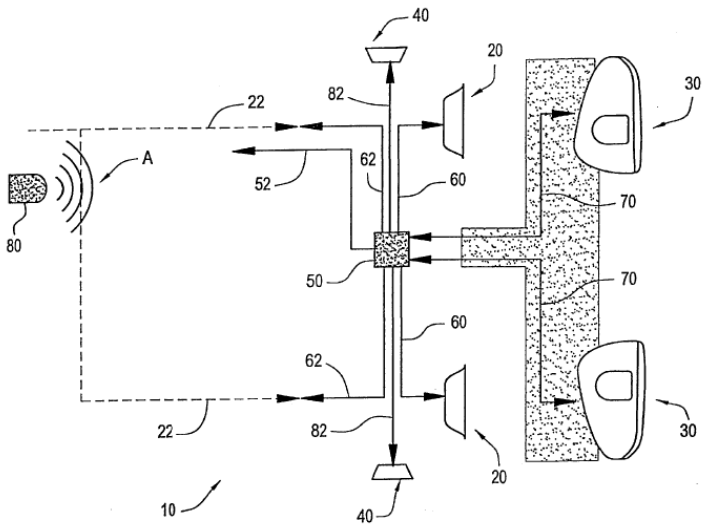
[2] A transcript of the oral hearing is included in the record as Paper 50 ("Tr.").

at 5:6–10. The light harness also includes an auxiliary light connector to connect to an auxiliary light, and a microprocessor to control the auxiliary lights. *Id*. at Abstract.

The ’829 patent emphasizes the shortcomings of prior art auxiliary light harnesses that required splicing the auxiliary lights into OEM headlight wiring. *Id*. at 2:5–26. For example, the ’829 patent observes that improperly spliced wires could lead to malfunction of vehicular electrical systems, and potentially damage those systems. *Id*. at 2:9–14. The ’829 patent also notes that “splicing of the auxiliary light system into the existing electrical system of the vehicle further made it difficult to connect and disconnect the auxiliary lights,” and that “[s]uch connecting and disconnecting also resulted in increased wear and damage to the spliced region of the vehicle electrical system thereby resulting in increased incidents of failure or malfunction of the vehicle electrical system.” *Id*. at 2:18–26. Accordingly, the ’829 patent explains that an “object of the present invention is the provision of an auxiliary multiplex light harness which utilizes the OEM wiring of a vehicle headlight system without the need to splice the OEM wiring to the vehicle headlights.” *Id*. at 11:1–4.

Figure 1 of the ’829 patent, reproduced below, depicts the integration of auxiliary multiplex light harness 10 into the electrical system of a vehicle. *Id*. at 13:20–21.

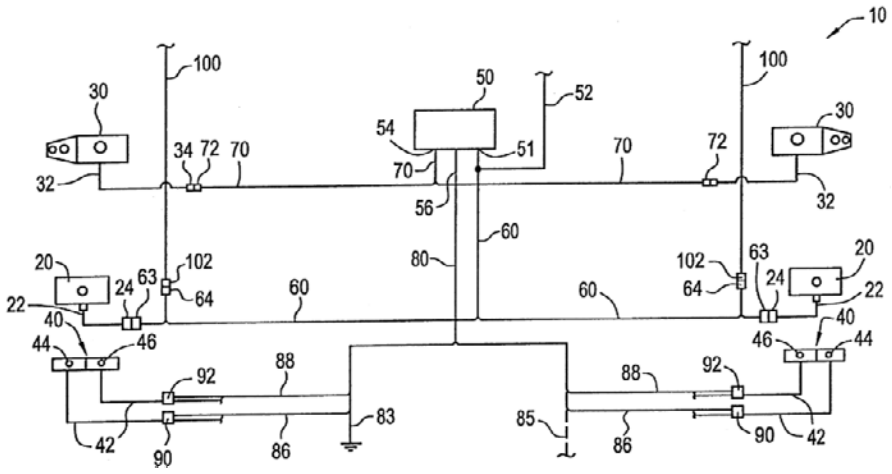
FIG.1



As shown in Figure 1, harness headlight wiring 60, and harness power wiring 62, are each connected to processing module 50. *Id*. at 13:24–26. Harness headlight wiring 60 is additionally connected to headlight 20, and harness power wiring 60 to headlight OEM wiring 22. *Id*. at 13:21–24. Auxiliary lights 30 are connected to processing module 50 via harness auxiliary light wiring 70. *Id*. at 13:26–28, 13:55–61.

Figure 2 of the ’829 patent, reproduced below, further illustrates the electrical connections between the auxiliary multiplex light harness, and the OEM vehicle headlight, turn light, and emergency light wiring. *Id*. at 13:38–40.

FIG.2



As depicted in Figure 2, OEM headlight wiring connectors 102 and 24 are disconnected from each other and mated to harness headlight power connector 64 and harness power wiring connector 63, respectively. *Id*. at 13:41–47. Likewise, auxiliary light wiring connector 34, included on auxiliary light 30, is connected to harness auxiliary light connector 72. *Id*. at 13:55–57.

The ’829 patent contemplates a different mechanism for electrically coupling the auxiliary light harness to vehicle turn and emergency lights. Rather than connecting the auxiliary harness to a pre-existing OEM wiring connector on the turn and emergency lights, the ’829 patent explains:

> Harness signal wiring 80 includes two wires 86, 88 which are connect[ed] to wiring 42 by connectors 90, 92. The electrical connectors can take any form which creates an electrical connection between turn/emergency light wiring 42 and turn light wire 86 and emergency light wire 88. Preferably, the connectors are electrical splices.

Id. at 13:62–67.

C. Illustrative Claim

Of the challenged claims, claim 1, reproduced below, is the sole independent claim, and is also illustrative of the claimed subject matter.

> 1. A light circuit for connecting an auxiliary light to a vehicle headlight system wherein said vehicle headlight system includes at least one headlight and at least one headlight plug which supplies power to said headlight, said light circuit comprising:
>
> a) a headlight connector to connect to said headlight;
>
> b) a first power connector to connect to said headlight plug;
>
> c) an auxiliary light connector to connect to an auxiliary light; and
>
> d) a processing module to control the amount of power to said headlight and said auxiliary light, said processing module including a microprocessor, said microprocessor, upon receipt of a control signal, at least partially causing said processing module to control at least one function of said headlight and said auxiliary light, said function including an operation selected from the group consisting of an on mode, an off mode, an intensity mode, and combinations thereof.

Ex. 1001, 22:22–40.

D. Prior Art Relied Upon

In its Petition, Douglas relies upon the following prior art references (Pet. 3–4):

Rhodes	US 5,770,999	June 23, 1998	(Ex. 1009)
Möller	US 4,942,571	July 17, 1990	(Ex. 1006)
Plyler	US 4,311,355	Jan. 19, 1982	(Ex. 1007)
Knepel	US 5,420,480	May 30, 1995	(Ex. 1005)
UniMount	Western Products UniMount Vehicle Installation Instructions and Parts List	Oct. 15, 1997	(Ex. 1008)

E. Asserted Grounds of Unpatentability

We instituted the instant trial based on the following grounds of unpatentability:

Claims	Basis	Reference(s)
1, 2, 4–6, 28–30, 36, 38, 39, 43, and 44	§ 103(a)	Knepel and Möller
5, 7, 29, 31, and 48–54	§ 103(a)	Knepel, Möller, and Plyler
8, 32, and 33	§ 103(a)	Knepel, Möller, Plyler, and UniMount
1, 2, 4, 5, 28–30, 32, 33, 36, 38, 39, and 44	§ 102(e)	Rhodes
4, 28, 36, and 43	§ 103(a)	Rhodes and Möller
5, 29, 31, and 48–54	§ 103(a)	Rhodes and Plyler
5–8	§ 103(a)	Rhodes, Möller, and Plyler

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b). Under the broadest reasonable interpretation standard, 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 disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Even under this standard, "the Board's construction cannot be divorced from the specification and the record evidence, . . . and must be consistent with the one that those skilled in the art would reach." *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) (noting that the Board may not "construe claims during IPR so broadly that its constructions are *unreasonable* under general claim construction principles") (internal quotations and citations omitted). The specification remains "the single best guide to the meaning of a disputed term and . . . acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1317 (Fed. Cir. 2015) (internal quotation omitted). "Thus a claim term may be clearly redefined without an explicit statement of redefinition." *Id*. (internal quotation omitted).

Only those terms that are in controversy need be construed, and only then to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

1. "headlight connector," "power connector," and "auxiliary light connector"

Claim 1 includes three terms that describe distinct connectors of the claimed light circuit: "a headlight connector to connect to said headlight," "a first power connector to connect to said headlight plug," and "an auxiliary light connector to connect to an auxiliary light" ("the 'connector' terms"). Ex. 1001, 22:27–31. In the Decision on Institution, we adopted the uncontested interpretations of the "connector" terms proffered by Douglas, and construed each of those terms to include "a plug, socket, or splice that electrically connects to" the relevant device. Dec. 6–7.

In its Patent Owner Response, Meyer argues that our constructions of the connector terms set forth in the Decision on Institution should be amended to exclude splices, based on the teachings of the specification and extrinsic evidence, including the Declaration of Steven V. Ricca (Ex. 2016, "Ricca Declaration"). PO Resp. 6–11. Meyer additionally asserts that the recited "auxiliary light connector" should be construed as a single connector, based on the embodiment of the auxiliary light connector disclosed in the specification and the Ricca Declaration. *Id*. at 13–14. Meyer does not otherwise challenge the interpretations of the connector terms set forth in the Decision on Institution. *Id.* at 6 n.2, 13.

Douglas agrees with the constructions as set forth in the Decision on Institution, and asserts that the term "[c]onnector should take its ordinary meaning in the context of the entire disclosure absent a special definition or disclaimer." Pet. Reply 7. Douglas additionally disputes Meyer's contention that "auxiliary light connector" should be interpreted to require a single connector. *Id*. at 8.

Whether the connector terms encompass splices is relevant to the grounds of rejection that rely on Rhodes, but not those involving Knepel, as Knepel discloses plugs for connecting the auxiliary light system to the OEM headlight wiring. Ex. 1005, 3:33–44, 8:6–17; *see* also PO Resp. 36–37. Whether the term "an auxiliary light connector" requires a single auxiliary light connector is relevant to each asserted ground of rejection.

Upon review of the parties' arguments and the evidence before us, including the specification and claims of the '829 patent, we have reevaluated our interpretation of the connector terms set forth in the Decision on Institution, and decide that it is necessary to revise our constructions of those terms to exclude splices. We decline, however, to read into the term "an auxiliary light connector" a requirement for a single auxiliary light connector.

The disclosure of the '829 patent is expressly addressed to the problem of, and a solution for, unreliable and vulnerable electrical connections caused by splicing auxiliary lights into OEM headlight wiring. The Background of the Invention explains that "[t]raditionally, the auxiliary lights were spliced into the existing wiring for the headlights of the vehicle.

The splicing of the existing wiring caused many problems." Ex. 1001, 2:6–9. The '829 patent goes on to enumerate myriad difficulties associated with spliced connections to OEM headlight wiring, including malfunctions resulting from loosened splices, electrical system damage caused by electrical shorts, OEM wiring warranty voiding, and failure or malfunction of the vehicle electrical system arising from wear and damaged to the spliced region caused by repeated connecting and disconnecting of the auxiliary lights as disadvantages of spliced connections between OEM headlight wiring and auxiliary lights. *Id*. at 2:9–26.

The Background of Invention concludes by observing that "[i]n view of the existing deficiencies of auxiliary light harnesses, there is a need for an auxiliary light harness that can be used with a wide variety of auxiliary lights, which *eliminates the need to splice the wiring to the headlights of a vehicle*." *Id*. at 4:39–43 (emphasis added). Similarly, the Summary of Invention identifies "provision of an auxiliary multiplex light harness which utilizes the OEM wiring of a vehicle headlight system *without the need to splice the OEM wiring to the vehicle headlights*" as an "object of the present invention." *Id*. at 11:1–4 (emphasis added).

Plainly stated, the specification "repeatedly, consistently, and exclusively" describes the invention of the '829 patent as an improved auxiliary light harness that eliminates the need to splice OEM headlight wiring. *In re Abbott Diabetes Care Inc.*, 696 F.3d 1142, 1150 (Fed. Cir. 2012) (finding that the claim term "electrochemical sensor" excluded cables and wires based on the repeated, consistent, and exclusive depiction in the

specification of an electrochemical sensor without external cables or wires and disparagement of sensors with external cables or wires) (internal quotation omitted); *see also SightSound Techs.*, 809 F.3d at 1317 ("Thus a claim term may be clearly redefined without an explicit statement of redefinition." (internal quotation omitted)).

It is undisputed that the "headlight connector," "power connector," and "auxiliary light connector" are each components of the claimed light circuit for electrically connecting auxiliary lights to the OEM wiring of a vehicle headlight system. *See* Ex. 1001, Fig. 2; *see also* Pet. 11–13. Accordingly, although we agree with Douglas that in the abstract, the isolated term "connector" would encompass an electrical splice, we cannot agree that the specific claim terms at issue here — each of which describes a particular connector necessary for coupling the auxiliary light to the OEM headlight wiring — when read in the context of the '829 patent, should be so broadly construed. *See Abbott Diabetes Care Inc.*, 696 F.3d at 1150.

As Douglas acknowledges (Pet. Reply 7), the claims of the '829 patent distinguish between headlight, power, auxiliary light, and signal connectors (Ex. 1001, 22:27–31, 22:41–44). Moreover, the specification differentiates connectors for electrically coupling the auxiliary lights and OEM headlight wiring on the on hand, and those for coupling turn/emergency lights and the auxiliary light harness on the other. In particular, the '829 patent describes splices as undesirable and inappropriate means for connecting auxiliary lights to OEM headlights (*id*. at 2:5–26), but indicates that such electrical splices are a preferred way to connect

turn/emergency lights to the auxiliary light harness (*id*. at 13:62–67). The illustration of the various connectors in Figure 2, which depicts harness power wiring connector 63, harness headlight power connector 64, and harness auxiliary light connector 72 as one type of connector, and connectors 90 and 92, which connect turn/emergency light wiring 42 and turn light wire 86 and emergency light wire 88, as another type of connector underscores that the '829 patent contemplates structural differences between these recited connector types. *Id*. at Fig. 2. We, thus, disagree with Douglas' assertion that the modifiers "headlight," "power," and "auxiliary light" fail to provide structure sufficient to exclude electrical splices.

Mr. Ricca's uncontested testimony lends further support to this conclusion. As Mr. Ricca explains, an ordinarily skilled artisan reading the '829 patent would have recognized that there are "different design constraints for connecting and disconnecting wires to the auxiliary light, headlight, and turn/emergency lights." Ex. 2016 ¶ 44. Specifically, Mr. Ricca notes that splicing OEM headlight wiring would render annual auxiliary light installation difficult, and increase the likelihood of headlight failure. *Id*. ¶¶ 44–45. In contrast, Mr. Ricca observes that "[u]nlike the auxiliary lights and headlights, the OEM wiring for turn/emergency lights needs to be maintained when integrating a wiring harness, and there is typically no existing separable OEM connector to the turn/emergency lights. The only way to connect turn/emergency lights to the processing module is to splice them." *Id*. ¶ 46. Mr. Ricca additionally explains that "the connection to the turn/emergency lights would not need to be made every

year, so the use of a semi-permanent tap-splice here would not be inconvenient." *Id*.

Even the portions of Mr. Ricca's testimony relied upon by Douglas serve to highlight that, in the context of the '829 patent, the modifiers "headlight," "power," "auxiliary light" and "signal" impart structural limitations on the term "connector" such that the recited "headlight connector," "power connector," and "auxiliary light connector" cannot encompass electrical splices. *See* Ex. 1033, 99:2–100:23. For example, in discussing the various connectors of the '829 patent, Mr. Ricca explains that "[t]he splice is the preferred connection at the turn signal emergency light, but it would be a bad practice to do it at the other point, such as the headlight and the power — first power connector." *Id*. at 100:1–6.

Accordingly, based on the implicit definitions set forth in the specification, and the claims themselves, we agree with Meyer that the broadest reasonable constructions of the "connector" terms exclude electrical splices.

We do not find persuasive, however, Meyer's contention that the construction of "an auxiliary light connector to connect to an auxiliary light" should be narrowed to require "a single connector (of either a plug or socket type) that electrically connects to a nonstandard vehicle light" (PO Resp. 14).

As a general rule, the words "a" or "an" in a patent claim carry the meaning of "one or more." *Baldwin Graphic Sys., Inc. v. Siebert, Inc.*, 512 F.3d 1338, 1342–43 (Fed. Cir. 2008). That rule is particularly applicable

where, as here, those words are used in combination with the open-ended antecedent "comprising." *See, e.g.*, *Abtox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1023 (Fed. Cir. 1997). "An exception to the general rule that 'a' or 'an' means more than one only arises where the language of the claims themselves, the specification, or the prosecution history necessitate a departure from the rule." *Baldwin Graphic*, 512 F.3d at 1342–43.

We discern no such exception here. First, Meyer has not identified, and we do not discern, any requirement in the language of the claims to support the conclusion that the recited "an auxiliary light connector to connect an auxiliary light" must be a single auxiliary light connector.

Moreover, although Meyer is correct that the specification describes a preferred embodiment of a three-wire cable for transmitting data and power from the processing module to the auxiliary light (PO Resp. 13–14), Meyer does not identify any discussion in the specification of the connector for connecting the three-wire cable to the auxiliary light (Ex. 1001, 15:34–35, 17:33–35). Neither does Mr. Ricca identify any aspect of the claims, specification, or prosecution history that would necessitate departure from the above-stated general rule, or otherwise indicate that the recited auxiliary light connector must be a single connector. Rather, Mr. Ricca points to the previously described portion of the specification discussing the three-wire cable, and goes on to opine, without explanation or support, that

> Because the specification is further drawn to providing a simple and efficient way to attach and detach auxiliary lights, a person of ordinary skill in the art would understand "an auxiliary light connector to connect to an auxiliary light" to mean "a single

> connector (of either a plug or socket type) that electrically connects to a non-standard vehicle light."

Ex. 2016 ¶ 50. Mr. Ricca does not, for example, explain why it would be unduly complicated or inefficient for there to be two auxiliary light connectors, instead of one.

Accordingly, because Meyer has not ascertained any reason to deviate from the well-established rule that "an" encompasses one or more, we decline to read a requirement that the recited "an auxiliary light connector" must be a single auxiliary light connector into the claims.

For the reasons stated above, for this Decision, in light of the claims and specification, we construe the claim term "a headlight connector to connect to said headlight" to mean "a plug or socket that electrically connects to a vehicle's headlight." Similarly, we interpret "a power connector to connect to said headlight plug" to mean "a plug or socket that electrically connects to the power supply of a vehicle's headlight." We likewise interpret "an auxiliary light connector to connect to an auxiliary light" to mean "a plug or socket that electrically connects to a non-standard vehicle light." Furthermore, we conclude that none of the above claim terms includes a requirement that the recited connector be a single connector.

2. "light circuit"

The preamble of claim 1 recites "[a] light circuit for connecting an auxiliary light to a vehicle headlight system . . . , said light circuit comprising . . . ." Ex. 1001, 22:22–26. Each dependent claim similarly begins by reciting "[t]he light circuit as defined in" the claim from which the

instant claim depends, and goes on to state the relevant limitations. *Id*. at 22:41–26:17. We did not construe "light circuit" in the Decision on Institution.

Meyer asserts in its Patent Owner Response that when "viewed in the context of both the claim language and the patent as whole, the term 'light circuit' is limiting. On its face, the term 'light circuit' plainly connotes a specific structure." PO Resp. 12. Meyer fails, however, to advance any proposed construction for this claim term. *See id*. at 11–13; Tr. 26:24–27:4.

Douglas responds that Meyer has neither identified the structure that the preamble term "light circuit" purportedly connotes, nor offered any hint as to its proposed construction for that term. Pet. Reply 8. Douglas additionally observes that Meyer appears to argue that "'light circuit' is an affirmative limitation comprising all of the claimed components," and notes that Mr. Ricca concedes that the scope of the challenged claims requires only the limitations in the body. *Id*.

As an initial matter, we observe that whether or not the preamble term "light circuit" is limiting has little bearing on the ultimate disposition of this *inter partes* review, as it is undisputed that Douglas has identified, for each asserted ground of unpatentability, disclosure of a light circuit. *See* PO Resp. 11–12.

Furthermore, we agree with Douglas that "light circuit" does not connote any structure beyond that explicitly recited in the body of the claims. Indeed, it is unclear that either Meyer or Mr. Ricca disputes such conclusion. For example, Meyer states in its Patent Owner Response that

"'light circuit' was meant as an affirmative limitation comprising all of the claimed components." *See id*. at 13. Similarly, Mr. Ricca testifies that the term light circuit does not, on its face, plainly connote a specific structure (Ex. 1033, 119:5–9), and further, that a light harness including elements a) through d) of claim 1, without more, would practice that claim (*id*. at 120:11–122:22).

Accordingly, we decline Meyer's invitation to determine that the preamble term "light circuit" states an (otherwise undefined) affirmative claim limitation.

3. "processing module including a microprocessor"

Claim 1 recites "said processing module including a microprocessor." In the Decision on Institution, we construed this term to mean "a control device that includes an integrated circuit for processing information." Dec. 9. Neither Douglas nor Meyer challenges the interpretation set forth in the Decision on Institution. *See* PO Resp. 5–14; Pet. Reply 7–8. Accordingly, for the reasons set forth in the Decision on Institution (Dec. 7–9), we broadly, but reasonably, construe "said processing module including a microprocessor" to mean "a control device that includes an integrated circuit for processing information."

B. Principles of Law

To establish anticipation, each and every element in a claim, arranged as recited in the claim, must be found in a single prior art reference. *Net MoneyIN, Inc. v. VeriSign, Inc*., 545 F.3d 1359, 1369 (Fed. Cir. 2008). "A reference anticipates a claim if it discloses the claimed invention 'such that a skilled artisan could take its teachings in combination with his own knowledge of the particular art and be in possession of the invention.'" *In re Graves*, 69 F.3d 1147, 1152 (Fed. Cir. 1995) (emphasis omitted) (quoting *In re LeGrice*, 301 F.2d 929, 939 (CCPA 1962)).

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the 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. *KSR Int'l Co. v. Teleflex Inc*., 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of 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) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

> When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, 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. *Sakraida* [*v. Ag Pro, Inc*., 425 U.S. 273 (1976)] and *Anderson's–Black Rock* [*v. Pavement Salvage Co*., 396 U.S. 57 (1969)] are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

KSR, 550 U.S. at 417.

The level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc*., 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

C. Obviousness Ground of Unpatentability Based on Knepel and Möller

Douglas asserts that claims 1, 2, 4–6, 28–30, 36, 38, 39, 43, and 44 are unpatentable under § 103(a) as obvious over Knepel and Möller. Pet. 18–30. Claims 2, 4–6, 28–30, 36, 38, 39, 43, and 44 depend, directly or indirectly, from claim 1. Douglas explains how the combination of Knepel and Möller discloses the subject matter of each challenged claim (*id*.), and relies upon the Declaration of Andrew J. Neuhalfen, Ph.D., P.E., ("Neuhalfen Declaration," Ex. 1014) to support its positions.

Upon review of Douglas' contentions and supporting evidence, as well as Meyer's Patent Owner Response and supporting evidence, we determine that Douglas has demonstrated, by a preponderance of the evidence, that claims 1, 2, 4–6, 28–30, 36, 38, 39, 43, and 44 of the '829 patent are unpatentable over Knepel and Möller.

1. Knepel

Knepel describes "an automatic headlamp switching system that enables an operator to use an existing vehicle headlamp switch to operate the headlamps on an accessory unit attached thereto." Ex. 1005, 1:46–50. Knepel discloses that a secondary circuit, which includes a secondary light source, is operatively connected to the primary (i.e., existing) circuit, which includes a primary light source. *Id*. at 1:50–60. Knepel explains that the system permits simultaneous interruption of the primary circuit from the energy source to the primary light source, and completion of the secondary circuit from the energy source to the secondary light source. *Id*. at 1:60–66.

Figure 3 of Knepel is reproduced below.

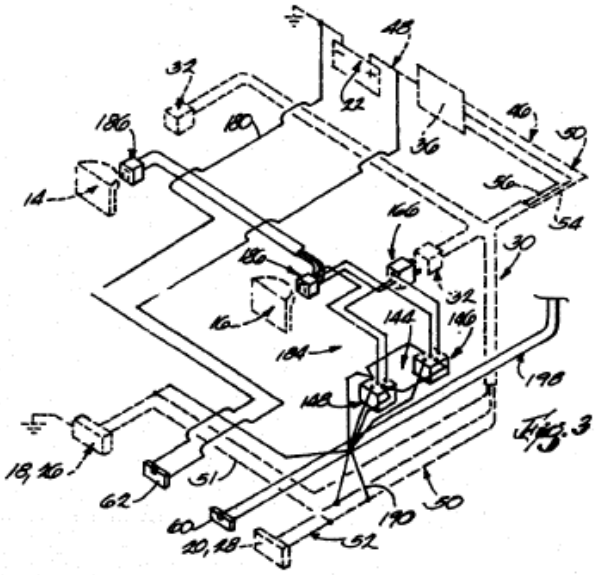


Figure 3 shows a perspective view of the described wiring harness integrated into the primary wiring of a vehicle. *Id*. at 2:9–10, 2:44–50. As shown in Figure 3, Knepel discloses a conventional primary circuit 46, including vehicle headlamps 14 and 16, as well as 3-prong female vehicle

headlamp connectors 32 and battery 22. *Id*. at 2:44–47. Knepel teaches that wiring harness 184 includes 3-prong female harness primary connectors 186, 3-prong male harness secondary connector 166, female plow plug 60, and female battery plug 62. *Id*. at 7:61–8:4. Knepel explains:

> [t]o install the wiring harness 184 into the vehicle . . . the vehicle headlamp connectors 32 (shown in dotted lines) are disconnected from the vehicle headlamps 14 and 16 and the pair of 3-prong female harness primary connectors 186 are plugged into their respective vehicle headlamps 14 and 16. The 3-prong male harness secondary connector 166 is plugged into one of the vehicle headlamp connectors 32. The other of the vehicle headlamp connectors 32 is left disconnected.

Id. at 8:27–36.

Knepel additionally discloses that an accessory unit including a secondary light source, such as a snowplow having snowplow headlights, is coupled to the vehicle via female plow plug 60 and female battery plug 62 on wiring harness 184, and the corresponding male plow plug and male battery plug on the accessory unit, or snow plow. *Id*. at 3:16–44, 2:15–17. Knepel further explains that when an accessory unit is attached to the vehicle, a second switch means is operatively incorporated into both the primary and secondary circuits, such that it can control the delivery of power to the primary and secondary lights. *Id*. at 4:32–56.

2. Möller

Möller describes an on-board network for a motor vehicle, equipped with a multiplex control for switching, controlling, and monitoring electrical devices, including lights. Ex. 1006, 1:6–10. Möller explains that the

described "on-board network is realized with relatively few components since simple electronic modules, particularly simple microcontrollers can be used for the controller devices. Only the bus interfaces are equipped with more sophisticated microprocessor and memory modules." *Id*. at 2:67–3:4.

Möller explicitly contemplates the incorporation of the disclosed on-board network into conventional relay circuit designs:

> The design of the on-board network according to the invention which initially serves only for the simplified transmission of switching information, can also be used to interlink certain switching states of the end devices logically with each other, optionally with consideration of time dependent conditions. Thereby, conventional relay circuits and simple electronic modules can be replaced.

Id. at 4:41–48.

3. Discussion

Claim 1

We have reviewed the Petition and the supporting evidence to which we are directed as to how Knepel meets all of the claim 1 limitations with the exception of

> said processing module including a microprocessor, said microprocessor, upon receipt of a control signal, at least partially causing said processing module to control at least one function of said headlight and said auxiliary light, said function including an operation selected from the group consisting of an on mode, an off mode, an intensity mode, and combinations thereof.

Ex. 1001, 22:33–40 ("the microprocessor limitation"). We are persuaded by Douglas' showing, and adopt it as our own, that Knepel describes a "light circuit for connecting an auxiliary light to a vehicle headlight system

wherein said vehicle headlight system includes at least one headlight and at least one headlight plug which supplies power to said headlight." Pet. 19 (emphasis omitted); Ex. 1005, 1:46–50, 2:17–21, 2:44–47; Ex. 1014 ¶¶ 49–50. We are additionally persuaded that Knepel's light circuit includes "a headlight connector to connect to said headlight" (Pet. 20; Ex. 1005, 8:6–13; Ex. 1014 ¶ 51), "a first power connector to connect to said headlight plug" (Pet. 20; Ex. 1005, 8:14–17; Ex. 1014 ¶ 53), and "an auxiliary light connector to connect to an auxiliary light," as recited in claim 1 (Pet. 20–21; Ex. 1005, 3:33–44, 6:5–9, Fig. 2; Ex. 1014 ¶ 55).

For the microprocessor limitation, Douglas relies on Knepel and Möller in combination. We agree with Douglas that Knepel discloses a processing module, including electromechanical relays, to control the amount of power to the vehicle headlight and auxiliary light. Pet. 21–23; Ex. 1005, 4:32–56; Ex. 1014 ¶ 57. We further agree with Douglas that Möller describes an on-board network for a motor vehicle, including microprocessors and microcontrollers, and teaches that the disclosed network can be used "to interlink certain switching states of the end devices logically with each other, optionally with consideration of time dependent conditions. Thereby, conventional relay circuits and simple electronic modules can be replaced" (Ex. 1006, 4:41–48). Pet. 23; Ex. 1014 ¶ 58.

We have reviewed the Petition and supporting evidence to which we are directed as to how the combination of Knepel and Möller meets the microprocessor limitation. Pet. 21–25. We are persuaded by Douglas' showing, and adopt it as our own, that the combination of Knepel and Möller

describes a

> processing module including a microprocessor, said microprocessor, upon receipt of a control signal, at least partially causing said processing module to control at least one function of said headlight and said auxiliary light, said function including an operation selected from the group consisting of an on mode, an off mode, an intensity mode, and combinations thereof.

Ex. 1001, 22:33–40.

Douglas contends that a person having ordinary skill in the art at the time of the invention would have found it obvious to incorporate the microprocessor of Möller into the light circuit design of Knepel to control at least one function of the headlight and auxiliary light because Möller expressly teaches that "conventional relay circuits and simple electronic modules can be replaced" with microcontrollers and or microprocessors (Ex. 1006, 4:41–48). Pet. 24; Ex. 1014 ¶ 59. In support of its position, Douglas points to two other prior art references evidencing the background knowledge of a person of ordinary skill in the art, Gould[3] and COP8,[4] which corroborate its rationale for incorporating the microprocessors and microcontrollers of Möller into the relay circuitry of Knepel. Pet. 24–25; Ex. 1014 ¶ 59. Douglas additionally relies on the testimony of Dr. Neuhalfen concerning the advantages and incentives associated with

[3] Gould, Micro 84 Programmable Controller User's Manual (April 1987) (Ex. 1010).
[4] COP8 Microcontroller – COMP8Sax Designer's Guide (Jan. 1987) (Ex. 1011).

incorporating microprocessors into existing relay system designs. Pet. 25; Ex. 1014 ¶ 59.

Notwithstanding Meyer's arguments to the contrary, which we address below, we are persuaded by Douglas' showing, which we adopt as our own, that claim 1 is unpatentable based on the combination of Knepel and Möller for the reasons provided by Douglas. *See* Pet. 21–25; Ex. 1014 ¶¶ 57–59. Möller expressly contemplates the incorporation of microprocessors and microcontrollers into relay circuitry. Ex. 1006, 4:41–48. The teachings of Gould and COP8 lend additional support to Douglas' contention that an ordinarily skilled artisan would have sought to incorporate microcontrollers and microprocessors into relay circuitry to control electrical end devices, such as headlights and auxiliary lights. For example, Gould discloses incorporating a microprocessor into a light circuit as "the 'brain' of the system," in order to eliminate numerous components required by relay control systems. Ex. 1010, 9, 11. Similarly, COP8 teaches that "Microcontrollers can also be used to replace analog circuitry. Special interface circuits can be used to enable a microcontroller to input and output analog signals." Ex. 1011, 14. Furthermore, Dr. Neuhalfen testifies that it was well-known at the time of invention of the '829 patent, to use microprocessors to control not only original vehicle lights, but also auxiliary lights in applications such as trailers, farm implements, and emergency vehicles. Ex. 1014 ¶ 59. Dr. Neuhalfen additionally testifies that "the ease of use and installation, space saving, expanded capabilities and low cost aspects of using microprocessors in place of analog relay circuitry created a

strong incentive to replace existing relay systems with microcontrollers utilizing microprocessors" *Id.*

Here, an ordinarily skilled artisan would have recognized that the incorporation of Möller's microcontrollers and microprocessors into the light circuit disclosed by Knepel would have improved the light circuit of Knepel to achieve the predictable result of controlling power to the vehicle headlight and auxiliary light, as well as controlling at least one function of the vehicle headlight and auxiliary light, including an on mode, an off mode, an intensity mode, and combinations thereof.

Meyer disputes both the extent of the teachings of Knepel, and the rationale for combining Knepel and Möller. As an initial matter, Meyer contends that Knepel was fully considered during prosecution, and thus, "[t]he correct assumption to make, based on this record, is that the Patent [O]ffice fully considered the Knepel reference, and determined that it could not anticipate or be used in a combination to render obvious any claims in the '829 patent." PO Resp. 36. Meyer also asserts that Knepel discloses neither the recited "auxiliary light connector," nor the claimed "processing module." *Id*. at 36–39. With regard to the "auxiliary light connector," Meyer argues that Douglas improperly identifies two connectors from Knepel, rather than a single connector, as disclosing this claim element. *Id*. at 36–37. Meyer additionally argues that the connectors on which Douglas relies cannot satisfy this claim element because an additional pair of connectors is required to provide power signals to the auxiliary light. *Id*. Concerning the "processing module," Meyer contends that Knepel is

deficient because the disclosed processing module "cannot control the amount of power to, and at least one function of, said headlight *and* said auxiliary light" together. *Id*. at 38–39.

In addition to challenging the adequacy of Knepel's disclosures, Meyer also disputes that an artisan of ordinary skill would have had reason to combine Knepel and Möller. PO Resp. 37–44. Specifically, Meyer argues that Douglas has not explained with sufficient particularity how the microprocessors and microcontrollers disclosed by Möller would be incorporated into the light circuit of Knepel. *Id*. at 39. Meyer also contends that, to the extent Douglas proposes replacement of relays in Knepel's power system with components from Möller's signal network, the cited references are incompatible and could not be combined. *Id*. at 40–41. Meyer additionally argues that an ordinarily skilled artisan would not have had reason to replace relays with microprocessors because light circuit users would have preferred a simpler design including relays rather than one including microprocessors (*id*. at 42), that the logical interlinking of end device switching states taught by Möller would not be useful in the light circuit of Knepel (*id*. at 44), and further, that the proposed combination Knepel and Möller would require extensive reengineering, such that an ordinarily skilled artisan would have been dissuaded from pursuit of that combination (*id*. at 43).

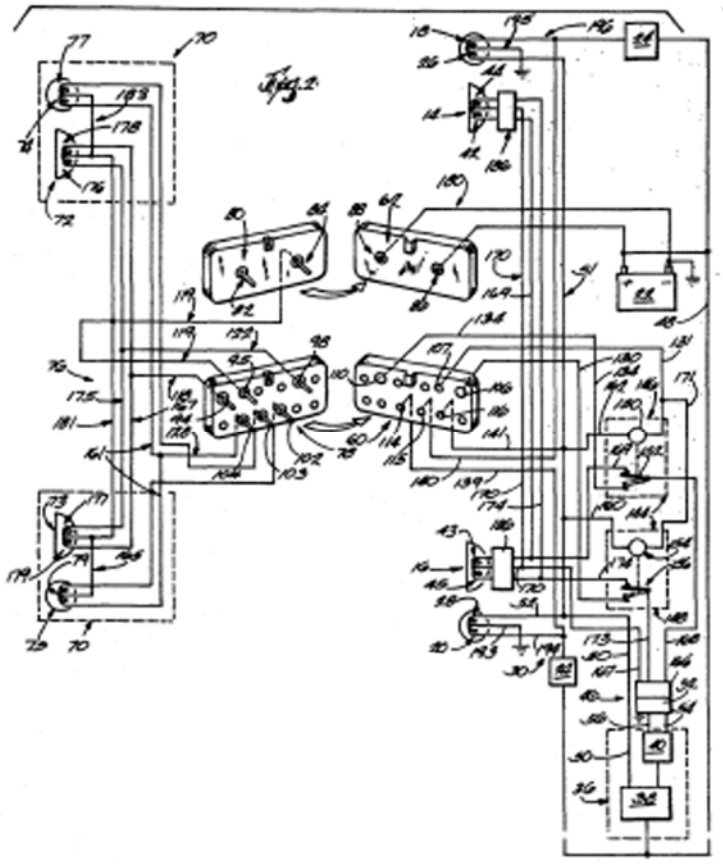
Turning first to the purported defects of Knepel, although we recognize that Knepel was disclosed to the Examiner during prosecution of the '829 patent (Ex. 1002, 59), and is cited on the face of the '829 patent

(Ex. 1001 [56]), we nevertheless decline Meyer's invitation to assume that because Knepel was before the Examiner, "it could not . . . be used in a combination to render obvious any claims in the ['']829 patent" (PO Resp. 36). In this regard, we note that Meyer has not presented evidence that the Examiner considered either the proposed combination of Knepel and Möller set forth in the Petition, or any disclosure by Knepel, much less the particular portions of Knepel on which Douglas now relies.

Meyer's assertion that Knepel fails to disclose the recited "auxiliary light connector" is also unavailing. As explained above, we decline to read into the claim term "an auxiliary light connector to connect to an auxiliary light" a requirement that the recited "an auxiliary light connector" must be a single auxiliary light connector. Rather, we broadly, but reasonably, construe that term to mean "a plug or socket that electrically connects to a non-standard vehicle light."

Neither do we find persuasive Meyer's contention that plow plugs 60 and 78 cannot satisfy the auxiliary light connector limitation of claim 1 because additional connectors are required to complete the light circuit. As Douglas avers in its Petition (Pet. 21), Knepel teaches that plow plugs 60 and 78 electrically couple a vehicle to a snowplow that includes snowplow headlamps, i.e., auxiliary lights (Ex. 1005, 1:46–49, 3:33–44).

Figure 2 of Knepel, reproduced below, visually depicts the relationship between the plow plugs and snowplow headlamps.



As seen in Figure 2, plow plugs 60 and 78 electrically couple the vehicle light system to snowplow lamps 72 and 73. *Id*. at Fig. 2. Indeed, Mr. Ricca acknowledged during deposition that the pins of plow plug 78 are electrically coupled to snowplow headlamps 72 and 73 (Ex. 1033, 172:7–14), and that power passes from the vehicle electrical system through plow plugs 60 and 78 under certain conditions, even when battery plugs 62 and 80 are disconnected (*id*. at 172:19–23). Accordingly, we determine that Douglas has demonstrated, by a preponderance of the evidence, that Knepel discloses "an auxiliary light connector to connect to an auxiliary light," as recited in claim 1.

Concerning Meyer's assertion that "Knepel can never turn on vehicle lights 14, 16 together with auxiliary lights 72, 73; thus, its 'processing module' 144 cannot control the amount of power to, and at least one function of, said headlight and said auxiliary light" (PO Resp. 38–39), as an initial matter, we note that Douglas relies on Knepel and Möller in combination, not Knepel in isolation, as disclosing the recited "processing module." Pet. 21–25; Pet. Reply 23; *see also In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) ("Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references. . . . [The reference] must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole.").

Moreover, we observe that claim 1 of the '829 patent does not include any requirement that the recited processing module must be able to turn on the vehicle lights "together with" the auxiliary lights. Rather, claim 1 simply requires that the processing module "control at least one function of said headlight and said auxiliary light, said function including an operation selected from the group consisting of an on mode, an off mode, an intensity mode, and combinations thereof." Ex. 1001, 22:36–40. *See Sjolund v. Musland*, 847 F.2d 1573, 1581 (Fed. Cir. 1988) ("[W]hile it is true that claims are to be interpreted *in light of* the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims.").

Knepel discloses a processing module to control the amount of power to the vehicle headlights and the auxiliary light through second switch means 144, which in turn uses relays to control the function of the auxiliary light with a control signal, including an on mode and an off mode. Ex. 1005, 4:33–54; 6:5–56. Indeed, Meyer does not dispute that Knepel discloses "rout[ing] power to either auxiliary lights or vehicle headlights." PO Resp. 38. We thus agree with Douglas that a preponderance of the evidence shows that Knepel discloses a processing module to control the amount of power to said headlight and said auxiliary light, including an on mode and an off mode.

As previewed above, in addition to disputing the adequacy of certain disclosures in Knepel, Meyer also advances several arguments challenging whether an ordinarily skilled artisan would have had reason to combine Knepel and Möller to arrive at the claimed invention. We have considered Meyer's contentions in this regard, but do not find them persuasive.

Meyer's assertion that Douglas has not explained with sufficient particularity how the microprocessors and microcontrollers of Möller would be incorporated into the light circuit of Knepel (PO Resp. 39) ignores the teachings of the prior art, fails to account for the level of skill in the art, and seeks to impose requirements for a detailed disclosure of the precise engineering contours of the proposed combination unsupported by law.

As set forth above, Möller explicitly teaches the incorporation of microprocessors and microcontrollers to improve relay-circuitry-based vehicle electronics systems. Ex. 1006, 4:41–48. Contemporaneous prior art

references, including Gould and COP8, disclose advantages obtained through the incorporation of microprocessors and microcontrollers into relay circuitry for controlling end devices, further underscoring that an ordinarily skilled artisan would have sought to modify the relay circuitry of Knepel with the microprocessors and microcontrollers of Möller. *See* Ex. 1010, 9, 11; Ex. 1011, 14. Moreover, Dr. Neuhalfen testifies, without challenge, that it was well-known at the time of invention of the '829 patent to use microprocessors to control original vehicle lights, as well as auxiliary lights, and identifies numerous advantages that the proposed combination would afford. Ex. 1014 ¶ 59. Indeed, Meyer's expert, Mr. Ricca, agrees that it would not have been difficult for an ordinarily skilled artisan to supplement the circuit of Knepel to provide microprocessor control of the relays in that circuit. Ex. 1033, 182:6–11.

In view of the teachings of Möller itself, and the contemporaneous prior art, as well as the testimony of Dr. Neuhalfen and Mr. Ricca, we find that a person of ordinary skill in the art at the time of the invention would have recognized the value of using known elements, i.e., microprocessors and microcontrollers, as taught by Möller, to improve the relay circuitry for controlling original vehicle lights and auxiliary lights of Knepel. We likewise find that a person of ordinary skill in the art would have appreciated that the microprocessors of Möller could be incorporated into, i.e., used to supplement, the relay circuitry of Knepel. *See KSR*, 550 U.S. at 418 (an obviousness analysis "need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account

of the inferences and creative steps that a person of ordinary skill in the art would employ.").

Meyer's emphasis on the absence of a detailed disclosure showing the precise contours of how Douglas proposes to incorporate Möller's microprocessors into Knepel's relay circuitry (*see* PO Resp. 39) is misplaced. Dr. Neuhalfen testifies that "[o]ne of ordinary skill in the art at the time of application for the '829 patent would have reasons to incorporate the microprocessor of Moller into the light circuit design of Knepel to control at least one function of the headlight and auxiliary light." Ex. 1014 ¶ 59. It is undisputed that an ordinarily skilled artisan would have known how to supplement the relays circuitry of Knepel with the microprocessors of Möller. *See* Ex. 1033, 180:7–181:17; 182:6–11. Accordingly, we determine that, in view of the level of ordinary skill in the art, as evidenced by the prior art and the testimony of Dr. Neuhalfen and Mr. Ricca, an ordinarily skilled artisan would have sought, with a reasonable expectation of success, to incorporate the microprocessors and microcontrollers of Möller into the relay circuitry of Knepel at the time of invention of the '829 patent. *See Scanner Techs. Corp. v. ICOS Vision Sys. Corp. N.V.*, 528 F.3d 1365, 1382 (Fed. Cir. 2008) ("the relatively small logical gap between the prior art and the claim in this case is closed by a person of ordinary skill in the art 'pursu[ing] known options within his or her technical grasp.'" (quoting *KSR*, 550 U.S. at 421)).

Meyer's contention that Knepel and Möller could not have been combined because the relays of Knepel's power system could not have been

replaced with components from Möller's signal network (PO Resp. at 40–41) is likewise misplaced. As explained above, Douglas proposes incorporation of Möller's microprocessors and microcontrollers into Knepel's relay circuitry; not the replacement of Knepel's relays with Möller's microprocessors. In particular, Douglas states that

> It would have been obvious to one of ordinary skill in the art at the time of application for the '829 patent to incorporate the microprocessor of Moller into the light circuit design of Knepel to control at least one function of said headlight and said auxiliary light because Moller expressly motivates replacing the relay circuitry of Knepel with more advanced circuits including microcontrollers or microprocessors. Ex. 1014 at ¶ 59. Additional references available at the time of the '829 application make this motivation clear. *Id*.

Pet. 24 (emphasis omitted); *see also* Ex. 1014 ¶ 59.

Meyer nevertheless seizes on Douglas' use of the term "replacing" in describing Möller's teaching to replace *relay circuitry* with more advanced circuits including microprocessors to assert that Douglas in fact proposes the replacement of *individual relays* with microprocessors, which, according to Meyer, would render the resultant device inoperable. Meyer's argument fails for two reasons.

First, Douglas nowhere suggests replacing relays with microprocessors. Rather, Douglas proposes incorporating Möller's microprocessors into Knepel's relay circuitry, and asserts that Möller's teachings concerning the replacement of *relay circuitry* with more advanced circuits that utilize microprocessors provides reason for making the proposed combination. Pet. 23 ("Moller expressly teaches that the relay circuitry of

the Knepel processing module can be replaced with microcontrollers and/or microprocessors." (emphasis omitted)). The replacement of relay circuitry with more advanced, microprocessor circuitry is vastly different from the replacement of individual relays with microprocessors. For example, contrary to Meyer's assertion, Douglas does not propose replacing discrete power system relays with microprocessors. Instead, Douglas contends that it would have been obvious to incorporate Möller's microprocessor into the light circuit of Knepel to control at least one function of the headlight and auxiliary light. *Id*. at 22–25. And Meyer's expert agrees that such supplementation of Knepel's relay circuits with Möller's more advanced microprocessor-based circuitry would not have been difficult. Ex. 1033, 181:9–182:11.

Second, Douglas' reference to replacing relay circuits with microprocessor-containing circuits adopts the language of Möller itself (Ex. 1006, 4:41–5:20), and as Meyer clarified during trial, it does not contend that the replacement of relay circuits with microprocessor-containing circuits, as proposed by Möller, would result in an inoperable device (Tr. 34:13–24).

Meyer additionally argues that an ordinarily skilled artisan would not have had reason to replace relays with microprocessors because light circuit users would have preferred a simpler design including relays rather than one including microprocessors (PO Resp. at 42), and further, that the proposed combination Knepel and Möller would require extensive reengineering, such that an ordinarily skilled artisan would have been dissuaded from pursuit of

that combination (*id*. at 43). The weight of the evidence does not support Meyer's position.

As an initial matter, we note that Meyer remains focused on a combination different from that actually proposed by Douglas. Douglas does not propose the replacement of relays with microprocessors, and, thus, Meyer's arguments concerning the purportedly substantial undertaking that would be required to make the proposed combination, as well as the lack of interest those skilled in the art would have in making such combination largely fall away.

We additionally observe that Mr. Ricca's testimony concerning reasons why "[a] skilled artisan in the snowplow art would often prefer a simpler design including relays over a complex design with a microprocessor" (Ex. 2016 ¶ 106) is unsupported by evidence, and, in fact, contradicted by several contemporaneous prior art references identified by Douglas and Dr. Neuhalfen (*see* Pet. 24–25; Ex. 1014 ¶ 59). Indeed, Mr. Ricca acknowledges that he lacks experience in the snowplow art, and that he did not consult with anyone skilled in the snowplow art prior to his testimony, but rather "drew upon other experiences related to controls where we like to use the 'keep it simple' principle." Ex. 1033, 187:22–188:12.

Furthermore, Mr. Ricca's acknowledgement, during his deposition, that in 1999, i.e., at the time of invention of the '829 patent, it would not have been difficult for an ordinarily skilled artisan to supplement the Knepel circuit to provide microprocessor control of the relays (Ex. 1033, 181:9–182:11) is contrary to, and undermines, Meyer's assertion that the proposed

combination would require "extensive and cumbersome re-engineering of the entire Knepel design" (PO Resp. 42–43).

Neither do we find persuasive Meyer's assertion that an ordinarily skilled artisan would not have had reason to combine Knepel and Möller because Knepel does not require logical interlinking, and Douglas fails to explain "what use Knepel has for the logical interlinking teaching of Möller." *Id*. at 44. Dr. Neuhalfen's testimony supports a determination that an ordinarily skilled artisan would have had reason to incorporate Möller's microprocessors into Knepel's relay circuitry, and highlights the advantages afforded by logical interlinking of original vehicle headlight and auxiliary light switching states. Ex. 1014 ¶¶ 58–59. For example, Dr. Neuhalfen testifies that "[i]n addition to being well-known to use microprocessors to control original vehicle lights, it also was well-known to use them to control auxiliary lights in applications such as trailers, farm implements, and emergency vehicles" (Ex. 1014 ¶ 59), and observes that the "expanded capabilities" of microprocessor-based circuitry motivate their incorporation into vehicle electrical systems (*id*.), suggesting the utility of logically interlinking headlight and auxiliary light switching states in a light circuit of the type disclosed by Knepel.

Moreover, even setting aside the explicit suggestion to replace relay circuitry with more advanced microprocessor-based circuitry made by Möller, Douglas identifies numerous reasons why an ordinarily skilled artisan would have sought to combine Knepel and Möller, including those set forth in contemporaneous prior art references such as Gould and COP8,

and those identified by Dr. Neuhalfen, including "ease of use and installation, space saving, expanded capabilities and low cost" of using microprocessor-based circuitry in lieu of relay circuitry. Ex. 1014 ¶ 59.

Based on this record, we conclude that Douglas has demonstrated by a preponderance of the evidence that claim 1 would have been obvious over the combination of Knepel and Möller.

Claim 2

Claim 2 depends from claim 1, and further recites "wherein said microprocessor at least partially causes said processing module to control the amount of power to at least one of said lights upon receiving at least one control signal from a switch." Ex. 1001, 22:41–45.

We have reviewed the Petition and supporting evidence to which we are directed as to how the combination of Knepel and Möller renders obvious claim 2. Pet. 25–26; Ex. 1014 ¶ 60. We are persuaded by Douglas' showing, and adopt it as our own, that Knepel describes "at least partially control[ing] the amount of power to a light through the relays in its processing module upon receiving at least one control signal from a switch," (Pet. 26), and further, that an ordinarily skilled artisan at the time of the invention of the '829 patent would incorporate the advanced microprocessor circuitry of Möller into the relay circuitry of Knepel, i.e., by "replacing" or supplementing Knepel's relay circuitry with microprocessor circuitry (Ex. 1014 ¶ 60; Pet. 26).

Meyer again premises its argument on a misapprehension of the combination proposed by Douglas, arguing that Douglas has not explained

how Möller's microprocessors, once substituted in place of Knepel's relays, "would at least partially cause some indeterminate processing module to control the amount of power to at least one of said lights upon receiving at least one control signal from a switch." PO Resp. 45. As explained above in the discussion of claim 1, however, Douglas does not propose simply replacing Knepel's relays with microprocessors, but rather, modifying the more rudimentary circuitry of Knepel to afford microprocessor control of at least one function of the original vehicle headlamps and auxiliary light. Pet. 21–25. Accordingly, we determine that a preponderance of the evidence supports Douglas' contention that the combination of Knepel and Möller renders obvious claim 2.

Claims 4 and 28

Claims 4 and 28 depend from claims 2 and 1, respectively, and further recite "wherein said processing module including [sic] a signal converter to convert nonserial data into serial data." Ex. 1001, 22:50–53, 24:4–6.

We have reviewed the Petition and supporting evidence to which we are directed as to how the combination of Knepel and Möller renders obvious claims 4 and 28. Pet. 26, 27; Ex. 1014 ¶¶ 61, 64. We are persuaded by Douglas' showing, and adopt it as our own, that Möller "discloses signal converters 43 to convert the analog signals of the end devices such as voltage and current, into suitable signals for processing and vice versa." Ex. 1014 ¶¶ 61, 64; Pet. 26, 27. We are also persuaded that, at the time of invention of the '829 patent, an ordinarily skilled artisan would have had reason to include the signal converter taught by Möller when incorporating

the microprocessor circuitry of Möller into the relay circuitry of Knepel, "to account for use of analog voltage and current from the lighting system to the digital microprocessor environment." Ex. 1014 ¶¶ 61, 64; Pet. 26, 27. In addition, we are persuaded that conversion between serial and parallel data by a signal converter reflects a routine design choice that would have been known to, and well within the capability of, an ordinarily skilled artisan at the time of invention of the '829 patent. Ex. 1014 ¶ 61, 70, 110, 111; Pet. 30; Ex. 1010, 104.

Similar to its arguments concerning the combination of Knepel and Möller addressed above, Meyer asserts that Douglas has not provided sufficient detail regarding how and why Möller's signal converter would be incorporated into Knepel's light circuit. PO Resp. 45. Meyer additionally asserts that "analog" does not necessarily mean "nonserial," and thus, Möller fails to disclose the conversion of "nonserial data into serial data," as required by the claims. *Id*.

We do not agree with Meyer's contention that Douglas fails to explain how and why of the proposed incorporation of Möller's signal converter into Knepel's light harness with sufficient detail to render claims 4 and 28 obvious. As Dr. Neuhalfen testifies, an ordinarily skilled artisan would have included Möller's signal converter when incorporating Möller's microprocessor into Knepel's light circuit "to account for use of analog voltage and current from the lighting system to the digital microprocessor environment." Ex. 1014 ¶¶ 61, 64. The engineering details as to how Möller's signal converter would be incorporated into Knepel's light circuit

are precisely the type of implementation specifics that would have been readily supplied "by a person of ordinary skill in the art 'pursu[ing] known options within his or her technical grasp.'" *Scanner Techs.*, 528 F.3d at 1382 (quoting *KSR*, 550 U.S. at 421).

Moreover, we do not find persuasive Meyer's unsupported, and unexplained assertion that analog does not necessarily mean nonserial (PO Resp. 27, 45; Ex. 2016 ¶ 72). We give such testimony little or no weight. 37 C.F.R. § 42.65(a). In this regard, we additionally note that Meyer does not take the position that the analog voltage and current signals of the proposed combination fail to read on the nonserial data limitations on claims 4 and 28, but rather, offers only the vague and general statement that analog is not necessarily the same as nonserial. Further, we credit Dr. Neuhalfen's testimony that Möller's signal converter for converting analog signals such as voltage or current to signals suitable for a digital microprocessor environment reads on the recited signal converter to convert nonserial data into serial data. Ex. 1014 ¶ 61. Accordingly, we determine that Douglas has demonstrated by a preponderance of the evidence that the combination of Knepel and Möller renders claims 4 and 28 obvious.

Claim 5

Claim 5 depends from claim 4, and further recites "wherein one end of said auxiliary light connector is connected to said processing module, said one end easily attachable and detachable from said processing module." Ex. 1001, 22:53–56.

We have reviewed the Petition and supporting evidence to which we are directed as to how the combination of Knepel and Möller renders obvious claim 5. As explained above with regard to claim 1, we are persuaded by Douglas' showing, and adopt it as our own, that Knepel describes plow plugs 60 and 78 electrically couple a vehicle to a snowplow having snowplow headlamps, i.e., auxiliary lights. Ex. 1005, 1:46–49, 3:34–44. We are further persuaded by Douglas' showing that "[p]lug member 78, *e.g.*, is an auxiliary light connector that is easily attachable and detachable from the processing module 144 in Knepel." Ex. 1014 ¶ 62; Pet. 26–27.

Meyer asserts, as it did with regard to claim 1, that "two plugs cannot be the auxiliary light connector." PO Resp. 46. Meyer additionally contends that Knepel fails to teach that one end of the auxiliary light connector is connected to, and easily attachable and detachable from the processing module. *Id*.

We have considered Meyer's arguments, but do not find them persuasive. As discussed above, the broadest reasonable interpretation of the claim term "auxiliary light connector" does not require that the recited "auxiliary light connector" be a single auxiliary light connector. Accordingly, for the reasons set forth above, plow plugs 60 and 78 of Knepel satisfy the auxiliary light connector limitation.

With respect to Meyer's assertions that Knepel's auxiliary light connector is not connected to, or easily attachable and detachable from the processing module, we observe that Meyer's arguments appear to emanate from its position that only one or the other of plow plugs 60 and 78 can read

on the auxiliary light connector of claims 1 and 5. For example, Meyer contends that "if Douglas views Knepel's plug 78 (which plugs into plug 60) as the one end of the auxiliary light connector, then plug 60 must be part of the processing module." PO Resp. 46. Meyer alternatively asserts that "if plug 60 is viewed as the auxiliary light connector that connects to the auxiliary lights 72, 73 through a plug or socket (e.g., by mating with plug 78), then there is no indication that the wiring from plug 60 is easily attachable and detachable from relays 144." *Id.*

Meyer's contention that either, but not both, of plow plugs 60 and 78 can read on the recited auxiliary light connector ignores the contours of Douglas' obviousness challenge, and is incompatible with our claim construction, which explicitly recognizes that the recited auxiliary light connector need not be a single connector.

Lastly, to the extent Meyer asserts that plow plug 78 is not easily attachable and detachable from processing module 144, we do not find this assertion persuasive. Claim 5 does not require that the auxiliary light connector be directly physically attached to the processing module. Rather, it recites that one end of the "auxiliary light connector is *connected to* said processing module, said one end easily attachable and detachable from said processing module." Ex. 1001, 22:53–56 (emphasis added). Because plow plug 78 is electrically connected to the processing module of the Knepel-Möller combination, and plow plug 78 is easily attachable and detachable from that electrical connection, plow plug 78 satisfies the requirements of claim 5

Accordingly, we find that a preponderance of the evidence supports Douglas' contention that Knepel discloses manually connectable and disconnectable plugs that electrically connect the accessory unit to the vehicle wiring, and in particular, provides an auxiliary light connector (i.e., plow plugs 60 and 78) having one end (i.e., plow plug 78) that is connected to, and easily attachable and detachable from, the processing module (i.e., switch means 144).

Claims 6, 30, and 44

Claims 6 and 30 depend from claims 5 and 1, respectively, and additionally recite "wherein said processing module at least periodically monitors at least one electrical signal from the electrical system of the vehicle." Ex. 1001, 22:57–59, 24:11–13. Claim 44 depends from claim 1, and further recites "wherein said processing module continuously monitors the status of said headlights." *Id*. at 24:60–62.

We have reviewed the Petition and supporting evidence to which we are directed as to how the combination of Knepel and Möller renders obvious claims 6, 30, and 44. We are persuaded by Douglas' showing, and adopt it as our own, that Knepel discloses that second switch means 144 (i.e., the processing module) determines whether an electrical signal from the vehicle is sent to the vehicle lights or auxiliary lights, and as such, the second switch means must necessarily "at least periodically monitor[] at least one electrical signal from the electrical system of the vehicle." Pet. 27; Ex. 1014 ¶ 63; Ex. 1006, 1:6–10; 1:34–38; 3:27–32. We are further persuaded by Douglas' showing that Möller discloses monitoring headlights

and taillights, in addition to describing the transmission of time-critical data to signal changes at the end devices, and thus teaches a processing module that continuously monitors the status of said headlights. Ex. 1006, Fig. 2; 4:24–31, 5:24–40; Ex. 1014 ¶ 71. We are also persuaded by Douglas' showing that an ordinarily skilled artisan would have had reason to improve Knepel's monitoring to incorporate the additional monitoring features disclosed by Möller because Möller teaches and provides reasons for monitoring electrical end devices, including lights. Ex. 1014 ¶ 63.

Meyer contends that Douglas fails to provide justification for combining the monitoring systems of Knepel and Möller. PO Resp. 47–48. We disagree. As explained above, Knepel teaches monitoring signals sent from the vehicle electrical system to the lights (auxiliary or otherwise) (Ex. 1005, 1:60–66), and Möller teaches monitoring headlights as part of the disclosed multiplex control system (Ex. 1006, 1:6–10; 1:34–38; 3:27–32). Accordingly, at the time of invention of the '829 patent, an ordinarily skilled artisan would have had reason not only to incorporate the microprocessor-based circuitry of Möller into Knepel as discussed above, but in so doing, would have additionally sought to improve upon the monitoring features of Knepel by incorporating the more advanced monitoring features of Möller in order to achieve the benefits of the more advanced light circuit described by Möller. Pet. 27; Ex. 1014 ¶ 63.

We, therefore, find that a preponderance of the evidence supports Douglas' contention that the combination of Knepel and Möller renders obvious claims 6, 30, and 44.

Claim 36

Claim 36 depends from claim 1 and additionally recites "wherein said microprocessor includes preprogrammable software control sequences." Ex. 1001, 24:29–31.

We have reviewed the Petition and supporting evidence to which we are directed as to how the combination of Knepel and Möller renders obvious claim 36. We are persuaded by Douglas' showing, and adopt it as our own, that Möller discloses use of software modules for control operations with the microprocessor in its microcontrollers. Pet. 28–29; Ex. 1014 ¶ 67; Ex. 1006, 5:7–12. We are further persuaded that an ordinarily skilled artisan at the time of invention of the '829 patent would have appreciated that software modules in a microprocessor are necessarily preprogrammable, because programming is necessary to configure a microprocessor to execute the desired functions. Pet. 28–29; Ex. 1014 ¶ 67. We are persuaded for the same reasons that the preprogrammable sequences disclosed by Möller would necessarily have been included when incorporating Möller's microprocessor into Knepel's light circuit, and furthermore, that an ordinarily skilled artisan would have sought to include Möller's preprogrammable software modules in Möller's microprocessors when incorporating those microprocessors into the light circuit of Knepel. Pet. 28–29; Ex. 1014 ¶ 67.

Meyer asserts that the combination of Knepel and Möller fails to disclose "programmable" sequences, consistent with its position that claim 36 should be amended to require "programmable" rather than

"preprogrammable" sequences. As explained below, however, we deny that motion. Furthermore, because it is undisputed that any functional microprocessor must have programming (Ex.1014 ¶ 67; Ex. 1033, 32:12–15), and because Möller explicitly states that software modules may be implemented on its microprocessor (Ex.1006, 5:10–12), we conclude that a preponderance of the evidence supports Douglas' contention that claim 36 would have been obvious over the combination of Knepel and Möller.

Claims 38 and 39

Claim 38 depends from claim 1 and additionally recites "wherein said microprocessor at least partially causes said processing module to send data signals to at least one auxiliary light to control said auxiliary light." Ex. 1001, 24:35–38. Claim 39 depends from claim 38 and further recites "wherein said data signals include signals selected from the group consisting of analog electrical signals, digital electrical signals, and combinations thereof." *Id*. 24:39–42.

We have reviewed the Petition and supporting evidence to which we are directed as to how the combination of Knepel and Möller renders obvious claims 38 and 39. We are persuaded by Douglas' showing, and adopt it as our own, that Möller discloses that operation of its onboard vehicle network is accomplished through the transmission of data signals, and that an ordinarily skilled artisan would have had reason to modify the processing module of Knepel to send data signals to at least one auxiliary light to control said auxiliary light when incorporating the microprocessor-based circuitry of Möller into the relay circuitry of Knepel.

Pet. 29; Ex. 1014 ¶ 68; Ex. 1006, Abstract. We are also persuaded by Douglas' showing that Möller discloses that each controller is equipped with signal translators for receiving binary or analog signals from the end devices, which may include lights, and for delivering binary and/or analog signals to those end devices. Pet. 29–30; Ex. 1014 ¶ 69; Ex. 1006, 2:23–29, 1:6–10. In addition, we are persuaded by Dr. Neuhalfen's testimony that an ordinarily skilled artisan would have included signals selected from the group consisting of analog electrical signals, digital electrical signals, and combinations thereof when incorporating Möller's microprocessor-based circuitry into Knepel's light circuit. Ex. 1014 ¶ 69.

Meyer's argument that Möller's Abstract does not discuss microprocessors or auxiliary lights misses the mark. First, Meyer ignores the discussion of claim 1, from which claims 38 and 39 ultimately depend, and which makes clear that Möller's microprocessors will send at least analog signals to Knepel's auxiliary lights in the proposed combination. Pet. 21–25; Ex. 1014 ¶¶ 57–59. Second, Möller's Abstract describes an "on-board network for motor vehicles contains a multiplex control for switching, controlling and monitoring electrical end devices" (Ex. 1006, Abstract), and thus plainly contemplates microprocessor control of auxiliary lights. *See* Ex. 1014 ¶¶ 68, 69.

Meyer's additional arguments track those addressed above with regard to claim 1. For the reasons set forth above we are unpersuaded by Meyer's assertion that the proposed combination of Knepel and Möller would require

overhauling the light harness of Knepel so as to render it unrecognizable (PO Resp. 49).

Accordingly, we conclude that a preponderance of the evidence supports Douglas' contention that claims 38 and 39 are obvious over the combination of Knepel and Möller.

Claim 43

Claim 43 depends from claim 1 and additionally recites "wherein said processing module includes a signal modifier to convert between serial and parallel data signals." Ex. 1001, 24:57–59. We have reviewed the Petition and supporting evidence to which we are directed as to how the combination of Knepel and Möller renders obvious claim 43. We are persuaded by Douglas' showing, and adopt it as our own, that it would have been an obvious design choice to add a signal modifier to the processing module to convert between serial and parallel data signals. Pet. 30; Ex. 1014 ¶ 70; Ex. 1010, 104. For example, Dr. Neuhalfen testifies that Gould, a prior art reference evidencing the background knowledge of a person of ordinary skill in the art, teaches a serial to parallel converter. Ex. 1014 ¶ 70; Ex. 1010, 104.

Meyer contends that Douglas provides a conclusory and inadequate explanation as to why claim 43 is unpatentable over Knepel and Möller, and in particular, has not provided sufficient explanation for the proposition that it would have been an obvious design choice to include a signal modifier in the light circuit of Knepel and Möller. PO Resp. 49–50. We do not agree. Rather, we are persuaded by Dr. Neuhalfen's unchallenged testimony that at

the time of invention of the ’829 patent, signal modifiers, as disclosed, for example, by Gould, would have been well-known to an ordinarily skilled artisan, and further, it would have been an obvious design choice for such an artisan to include a signal modifier in the Knepel-Möller light circuit, in order to achieve the necessary conversion between serial and parallel data signals. Ex. 1014 ¶ 70.

We, therefore, conclude that a preponderance of the evidence supports Douglas’ contention that claim 43 would have been obvious over the combination of Knepel and Möller.

D. Obviousness Ground of Unpatentability Based on Knepel, Möller, and Plyler

Douglas asserts that claims 5, 7, 29, 31, and 48–54, which depend directly or indirectly from claim 1, are unpatentable under § 103(a) as obvious over Knepel, Möller, and Plyler. Pet. 31–37. Douglas explains how the combination of Knepel, Möller, and Plyler discloses the subject matter of each challenged claim (*id*.), and relies upon the Neuhalfen Declaration to support its positions.

Upon review of Douglas’ contentions and supporting evidence, as well as Meyer’s Patent Owner Response and supporting evidence, we determine that Douglas has demonstrated, by a preponderance of the evidence, that claims 5, 7, 29, and 31, but not claims 48–54, of the ’829 patent are unpatentable over the combination of Knepel, Möller, and Plyler.

1. Plyler

Plyler describes a weatherproof electrical connector having an interface sealing arrangement. Ex. 1007, Abstract. Plyler explains that the electrical systems of automotive vehicles sometimes require electrical connectors in locations exposed to weather conditions, such as the underbody. *Id*. at 1:9–15. Plyler proposes the use of an interface sealing arrangement for electrical connector bodies to protect internal electrical connections from weather conditions such as road splash and snow accumulation. *Id*. at 1:15–24.

Figure 6 is reproduced below.

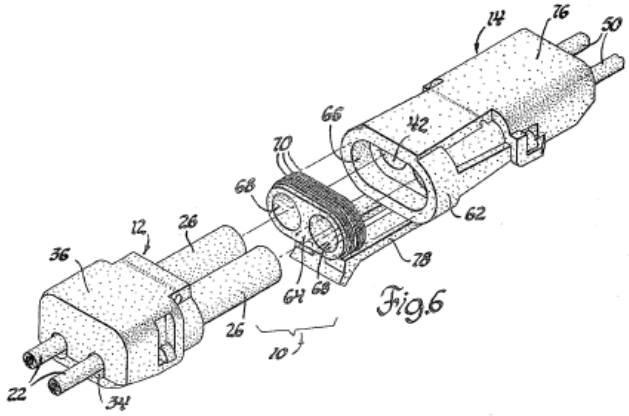


Fig.6

Figure 6 of Plyler shows an exploded perspective view of the disclosed electrical connector. Ex. 1007, 2:8–9. Figure 6 depicts sealed electrical connector 10, including plug connector body 12, and socket connector body 14. *Id*. at 2:10–14. Towers 26 fit into the side wall of enlarged cavity portions 42 to form part of an interface sealing arrangement. *Id.* at 3:25–27. This interface sealing arrangement additionally includes longitudinally

projecting shroud 62 on socket connector body 14, and seal pad 64. *Id*. at 3:27–29.

Seal pad 64 is made from an elastomeric material and has a pair of longitudinal apertures 68 extending through its body by means of which the seal pad 64 is mounted on the towers 26. *Id*. at 3:33–37. To effect a good seal at the tower surfaces, apertures 68 are slightly undersized with respect to the rearward end portions of towers 26. *Id*. at 3:37–40. In addition, seal pad 64 has a plurality of flexible radial sealing lips 70, which are deformed into sealing engagement with the sealing surface 66 of the shroud 62 when the connector bodies 12 and 14 are mated. *Id*. at 3:40–44.

2. Discussion

Claims 5 and 29

We have reviewed the Petition and the supporting evidence to which we are directed as to how the combination of Knepel, Möller, and Plyler meets all of claims 5 and 29. We are persuaded by Douglas' showing, and adopt it as our own, that Plyler supplements the disclosure of an easily attachable and detachable connection between the auxiliary light connector and processing module by Knepel (discussed above) because Plyler discloses a connector that serves as a guide for mating the terminals carried in the respective electrical connector bodies, further easing connector attachment and detachment. Pet. 31–32; Ex. 1014 ¶ 74; Ex. 1007, 1:46–49, 3:19–24. We are additionally persuaded by Douglas' showing that an ordinarily skilled artisan would have had reason to incorporate the easily attachable and detachable sealing connector design taught by Plyler into the

auxiliary light harness of Knepel, as modified by Möller, because Plyler discloses reasons for using the described sealing connectors in vehicles exposed to weather conditions of the type the light harness of Knepel would be expected to encounter. Pet. 31–32; Ex. 1007, 1:15–24, 3:40–44; Ex. 1014 ¶ 74.

Meyer contends that Douglas fails to explain with the requisite precision "what components of Knepel or Möller would be modified or replaced with Plyler's connectors and how." PO Resp. 50. Meyer goes on to assume that Douglas proposes replacing Knepel's plow plugs with Plyler's connectors, and asserts that Plyler's connectors are unsuitable for such modification, and further, that replacement of Knepel's plugs with Plyer's connectors would not function for its intended purpose, because Plyler's connectors are designed for low current subsystems, not higher current auxiliary light systems. *Id*. Meyer lastly asserts that combination with Plyler fails to cure the purported defects discussed above as to the disclosure of an "auxiliary light connector" by Knepel. *Id*. at 51.

Meyer's assertion that Douglas has not described the proposed combination of Knepel, Möller, and Plyler with sufficient particularity is reminiscent of its argument, addressed above, concerning the sufficiency of Douglas' description of the proposed combination of Knepel and Möller, and fails for similar reasons. It is apparent from the Petition, as well as Dr. Neuhalfen's testimony, that Douglas proposes to incorporate the easily attachable and detachable connector sealing arrangement of Plyler into the electrical systems of Knepel. For example, Dr. Neuhalfen testifies that

> While I believe that the connectors of Knepel disclose the ease of attachment and detachment claimed in Claims 5 and 29 as discussed above, Plyler also discus[s]es this feature. P[l]yler discloses a connector that serves as a guide for mating the terminals carried in the respective electrical connector bodies, further easing attachment and detachment. Ex. 1007 at 1:46-49; 3:19-24. One of ordinary skill in the art at the time of application for the '829 patent would use the connectors of Plyler with the electrical systems of Knepel (and Moller) because Plyler motivates providing "an interface sealing arrangement for matable electrical connector bodies which protects internal electrical connections from weather conditions expected during operation of an automotive vehicle[.]"

Ex. 1014 ¶ 74. Dr. Neuhalfen additionally testifies that "from my experience, I know that connectors having an easy attachment and detachment were already used on automobiles. It would not only be obvious but extremely convenient, if not necessary, to use the same type of connectors for an auxiliary light harness." *Id*.

Neither are we persuaded by Meyer's argument that the proposed combination fails because Plyler's connectors are unsuitable for use in Knepel's light harness, and that the resulting combination would not function for its intended purpose. As an initial matter, we note that neither Meyer nor Mr. Ricca provides evidence or explanation as to why Plyler's connectors would not be suitable for or function in combination with Knepel, but rather, simply concludes that the combination would not work. We give such testimony little or no weight. 37 C.F.R. § 42.65(a).

We additionally observe that "[t]o justify combining reference teachings in support of a rejection it is not necessary that a device shown in

one reference can be physically inserted into the device shown in the other." *In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (citations omitted). Thus, the fact that Plyler teaches the use of the disclosed easily attachable and detachable connector sealing arrangement in low current connectors does not preclude or otherwise teach away from the use of a similar sealing arrangement for higher current connectors.

Indeed, Plyler identifies both the provision of "an interface sealing arrangement for matable electrical connector bodies which protects internal electrical connections from weather conditions expected during operation of an automotive vehicle" (Ex. 1007, 1:20–24) and the provision of "satisfactory interface sealing arrangement for matable electrical connector bodies which have internal low current electrical connections and which are exposed to weather conditions which subject the connector bodies to moisture and water" (*id*. at 1:25–30) as objects of the invention, indicating that the disclosed connectors are appropriate for use in higher current settings, as well as low current settings.

Accordingly, we determine that it would have been well within the capability of an ordinarily skilled artisan pursuing known options within her technical grasp to incorporate the easily attachable and detachable sealing arrangement of Plyler's connectors into Knepel's plugs. *See Scanner Techs.*, 528 F.3d at 1382.

Claims 7 and 31

Claims 7 and 31 depend from claims 6 and 1, respectively, and further recite "wherein an auxiliary light connection includes a sealing arrangement." Ex. 1001, 22:60–61, 24:14–15.

We have reviewed the Petition and the supporting evidence to which we are directed as to how the combination of Knepel, Möller, and Plyler meets all of claims 5 and 29. We are persuaded by Douglas' showing, and adopt it as our own, that Plyler discloses electrical connections that include a sealing arrangement (Ex. 1007, 3:45–47), as well as reasons for using such a sealing arrangement in vehicles exposed to weather conditions that subject electrical connections to water or moisture (*id*. at 1:15–24, 3:40–44). Pet. 32, 33; Ex. 1014 ¶ 73. We are further persuaded that an ordinarily skilled artisan at the time of invention of the '829 patent would have incorporated the seal pad of Plyler into the connectors of Knepel. Pet. 32; Ex. 1014 ¶ 73. For example, we are persuaded by Dr. Neuhalfen's testimony that the electrical connectors of Knepel may be exposed to moisture or water because the disclosed light harness is designed for snowplowing, and Plyler teaches the advantages of using sealed electrical connectors in such circumstances. Ex. 1014 ¶ 73. We are likewise persuaded by Dr. Neuhalfen's testimony that "[f]rom my experience, I know that connectors having a sealing arrangement were already used on automobiles. It would not only be obvious but extremely convenient, if not necessary, to use the same type of connectors for an auxiliary light harness." *Id*.

Meyer does not separately argue the patentability of claims 7 and 31, but rather, relies on the same arguments addressed above regarding the obviousness of claims 1 and 6 in view of Knepel and Möller. For the reasons set forth above, we do not find Meyer's arguments persuasive.

Claims 48–54

Claim 48 depends from claim 1 and further recites "wherein said processing module includes a sealing arrangement, said sealing arrangement adapted to inhibit interference with electrical signals to said processing module, from said processing module, and combinations thereof." Ex. 1001, 25:8–12.

We have reviewed the Petition and the supporting evidence to which we are directed as to how the combination of Knepel, Möller, and Plyler meets all of claims 5 and 29. We are not persuaded, however, that it would have been obvious to include the sealing arrangement of Plyler in the processing module of Knepel as modified by Möller.

Although we agree with Douglas that "Plyler's sealing arrangement operates to inhibit interference with electrical signals, and one of ordinary skill at the time of application for the '829 patent would have reason to use the connectors of Plyer with Knepel and Moller" (Pet. 33), Douglas' failure to explain how or why an ordinarily skilled artisan would have sought to incorporate Plyler's connectors into the processing module of Knepel as modified by Möller is fatal to Douglas' obviousness argument.

Douglas does not assert in its Petition that the processing module of Knepel, as modified by Möller, itself includes an attachable and detachable

connector. Indeed, as discussed above with regard to claim 5, Douglas points to plow plug 78 as disclosing the recited "one end of said auxiliary light connector [that] is connected to said processing module, said one end easily attachable and detachable from said processing module." Ex. 1001, 22:53–56. Although plow plug 78 is connected to the processing module, it is so connected by way of intervening wiring; Douglas does not identify plow plug 78 as included on the processing module itself. Neither does Douglas identify some other attachable and detachable connector that is included on the processing module.

Accordingly, we agree with Meyer that Douglas' failure to identify what components of Knepel-Möller combination would be modified to include Plyler's connections, and how those components would be modified, as well as Douglas' failure to provide a reason why an ordinarily skilled artisan would have sought to incorporate attachable and detachable connectors into the processing module, undermines Douglas' obviousness argument. We, therefore, determine that a preponderance of the evidence does not support Douglas' assertion that claim 48 would have been obvious based on the combination of Knepel, Möller, and Plyler.

Because claims 49–54 depend, either directly or indirectly, from claim 48, we additionally conclude that a preponderance of the evidence does not support Douglas' contention that claims 49–54 are obvious based on the combination of Knepel, Möller, and Plyler.

E. Obviousness Grounds of Unpatentability Based on Knepel, Möller, Plyler, and UniMount

Douglas asserts that claims 8, 32, and 33, which depend directly or indirectly from claim 1, are unpatentable under § 103(a) as obvious over Knepel, Möller, Plyler, and UniMount. Pet. 37–39.

Upon review of Douglas' contentions and supporting evidence, as well as Meyer's Patent Owner Response and supporting evidence, we determine that Douglas has not demonstrated by a preponderance of the evidence that claims 8, 32, and 33 of the '829 patent are unpatentable over Knepel, Möller, Plyler, and UniMount.

1. UniMount

UniMount is a vehicle installation instruction manual and parts list for an auxiliary light harness identified as being manufactured under the Knepel patent. Ex. 1008, 1; Pet. 37; Ex. 1014 ¶ 82. UniMount discloses the use of an auxiliary light harness in vehicles having daytime running lights ("DRLs"). Ex. 1008, 4, 10–14, 20, 21, 24–26.

2. Discussion

Claims 8, 32, and 33

Claims 8 and 32 depend from claims 7 and 1, respectively, and further recite "wherein said microprocessor at least partially causes said processing module to generate a power reducing signal upon receiving at least one control signal from a daylight detector." Ex. 1001, 22:62–65, 24:16–19.

We have reviewed the Petition and the supporting evidence to which we are directed as to how the combination of Knepel, Möller, Plyler, and

UniMount meets the limitations of claims 8 and 32. We are not persuaded, however, that it would have been obvious to modify the microprocessor of Knepel and Möller to at least partially cause the processing module to generate a power reducing signal upon receiving at least one control signal from a daylight detector. In particular, we are not persuaded that the proposed combination includes a daylight detector, much less renders obvious causing the processing module to generate a power reducing signal upon receipt of a control signal form a daylight detector.

Douglas acknowledges in the Petition that Knepel, Möller, Plyler, and UniMount "lack disclosure of specific details regarding vehicles having daylight detectors as recited in these claims." Pet. 37. Douglas thus relies on UniMount, the commercial embodiment of Knepel as disclosing these limitations. *Id*. at 37–38. But Douglas does not identify any disclosure by UniMount of a daylight detector, much less of the claimed relationship between the daylight detector, microprocessor, and processing module. Indeed, the sole support offered by Douglas for the proposition that UniMount teaches a daylight detector is Dr. Neuhalfen's uncorroborated statement that "[a]s I learned from my experience in the automotive industry, DRL's use a daylight sensor to detect whether the headlights should be operating in daytime running mode or nighttime running mode." Ex. 1014 ¶ 83. Similarly, Dr. Neuhalfen simply asserts, without evidence or explanation that:

> To the extent that the DRL signal from the vehicle is passed through the auxiliary light harness to the auxiliary lights, that DRL signal will run through the processing module. When the

> microprocessor and microcontroller of Moller is used in place of the relay controller disclosed by Knepel, and *implemented as discussed in UniMount 1997, the microprocessor will at least partially cause the processing module to generate a power reducing signal* upon receiving at least one control signal from a daylight detector. That signal will send a reduced voltage to either the auxiliary lights or the vehicle headlamps.

Id. (emphasis added). Dr. Neuhalfen's unsupported testimony, however, is insufficient to establish that UniMount discloses a daylight sensor. 37 C.F.R. § 42.65(a).

This is particularly so where, as here, Meyer presents evidence and analysis to support a determination that UniMount does not inherently disclose a daylight detector or a power reducing signal generated by the processing module. As Meyer explains (PO Resp. 53), UniMount teaches that its light harness may be used on vehicles equipped with DRLs subsequent to installation of a "DRL Kit." Ex. 1008, 4, 9–11, 14–17, 20–21, 24–26. In describing installation of the DRL Kit, UniMount discloses routing a wire of the DRL kit from relays through a fuse holder and to the ignition terminal (either a fuse box terminal or an accessory wire controlled by the ignition key switch). *Id.* at 9–11, 14, 20–21, 24–26. Based on this circuitry, Mr. Ricca testifies that "UniMount's harness (with the DRL Kit) has no provision for a daylight detector. As soon as the ignition switch is turned on, power is applied to the DRL wire from the ignition terminal, through the fuse, and to the relays." Ex. 2016 ¶¶ 116–117. Mr. Ricca additionally testifies that "[c]omparing UniMount's DRL and DRL-less circuits makes it clear that the only difference in operation is when power is

applied to the coils. For DRL circuits, power is applied automatically when the ignition is turned on. For DRL-less circuits, power is applied when the parking lights are turned on. *Id*. ¶ 119.

Douglas does not dispute in its Reply that UniMount fails to disclose a daylight detector. Pet. Reply 31. Rather, Douglas asserts that "the detector limitation is met because it would be obvious to use the Knepel/UniMount harness as modified with an OEM daylight detector when used with an OEM DRL system." *Id*. Douglas offers no explanation, however, as to why such combination would have been obvious, or how an ordinarily skilled artisan would have modified the light circuit of Knepel, Möller, and UniMount to work with a daylight detector, including, for example, how the processing module would receive control signals from the daylight detector and in response, generate a power reducing signal.

Accordingly, we determine that Douglas has not established, by a preponderance of the evidence, that UniMount renders discloses a "daylight detector," or the generation of a power reducing signal by the processing module upon receiving at least one control signal from a daylight detector, as required by claims 8 and 32. We, therefore, conclude that Douglas has not shown by a preponderance of the evidence that claims 8 and 32 are obvious based on the combination of Knepel, Möller, Plyler, and UniMount.

Because claim 33 depends from claim 32, we additionally conclude that a preponderance of the evidence does not support Douglas' contention that claim 33 would have been obvious based on the combination of Knepel, Möller, Plyler, and UniMount.

F. Anticipation Grounds of Unpatentability Based on Rhodes

Douglas asserts that claims 1, 2, 4, 5, 28–30, 32, 33, 36, 38, 39, and 44 are unpatentable under § 102(e) as anticipated by Rhodes. Pet. 39–50. Claims 2, 4, 5, 28–30, 32, 33, 36, 38, 39, and 44 depend, directly or indirectly, from claim 1.

Upon review of Douglas' contentions and supporting evidence, as well as Meyer's Patent Owner Response and supporting evidence, we determine that Douglas has not demonstrated by a preponderance of the evidence that claims 1, 2, 4, 5, 28–30, 32, 33, 36, 38, 39, and 44 of the '829 patent are unpatentable over Rhodes.

1. Rhodes

Rhodes describes "an improved blackout control system for lighting control systems installed within an emergency or police vehicle for altering the control of the lighting features of the vehicle." Ex. 1009, 1:11–14. The lighting control system taught by Rhodes permits control of an auxiliary "sneak light," distinct from a standard vehicle headlight, that "produces less light than the vehicle headlights" to facilitate surveillance activities. *Id.* at 11:21–32. For example, a sneak light allows a law enforcement vehicle to approach a suspect without headlights operating, so as not to be detected. Ex. 1009, 2:44–49. Rhodes further teaches that operation of the sneak light is controlled by a microprocessor. *See, e.g.*, *id.* at 8:36–9:32.

The blackout control system of Rhodes includes a wiring harness that is designed to be integrated with a vehicle's existing electrical wiring

system, a control unit attached to the wiring harness, and a control panel unit to operate the control unit. Ex. 1009, 2:13–19, 10:50–59.

Figures 3A and 3B are reproduced below.

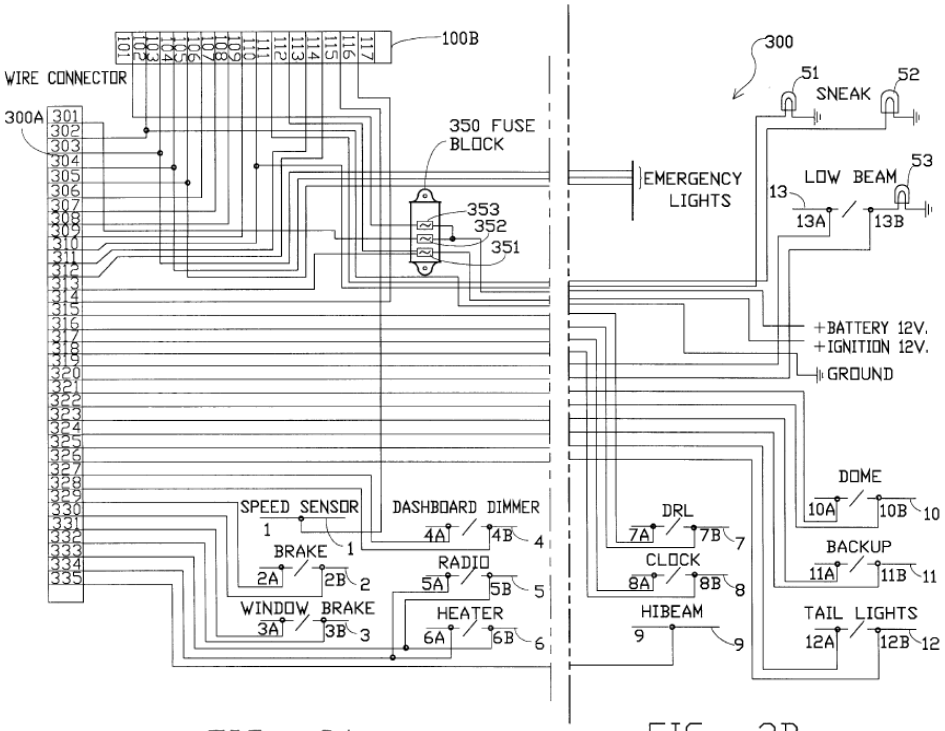


FIG. 3A FIG. 3B

Figures 3A and 3B depict the wiring diagram for the harness unit attachable to the control panel unit taught by Rhodes. Ex. 1009, 3:47–49. Rhodes teaches that high beam sneak light 51 and low beam sneak light 52 are respectively connected to pins 110 and 111 of the panel connector bus bar of the blackout switch panel circuit (i.e., control panel unit). *Id.* at 11:52–54, 10:50–55, Figs. 3A, 3B. Pin 110 is additionally connected to pin 310, which is part of wire socket and pin connector unit 300A of harness 300. *Id.* at 11:52–54, 10:50–55, Figs. 3A, 3B.

Rhodes additionally teaches that headlight 53 is connected to harness 300. *Id*. at Fig. 3B, 9:5–16. In particular, Rhodes discloses that the wire of the original vehicle electrical system leading from the headlight switch to low beam headlight 53 is cut, forming wires 13A and 13B, which are then connected to pins 319 and 320 on wire socket and pin connector unit 300A. *Id*. at 12:47–50, 11:60–61, Figs. 3A, 3B.

Rhodes further discloses a microprocessor capable of controlling both the sneak lights and the original vehicle headlights. For example, Rhodes discloses that "[i]f for any reason the power to the low sneak light 52 is disabled or the bulb in the low sneak light should burn out, the microprocessor M150 will automatically turn on the high sneak light to maintain lighting to the front of the vehicle." *Id*. at 8:47–50. Similarly, Rhodes explains that the microprocessor can disable the high beam flash mode of the high beam headlight. *Id*. at 7:23–25.

2. Discussion

Claim 1

We have reviewed the Petition and the supporting evidence to which we are directed as to how Rhodes meets all of the claim 1 limitations. We are not persuaded, however, that Rhodes teaches the "headlight connector" or "first power connector" required by claim 1.

Douglas avers that pin 320 of Rhodes discloses the recited "headlight connector." Pet. 40. The entirety of Douglas' argument from the Petition concerning disclosure of the "headlight connector" by Rhodes is reproduced below:

> This element is properly construed as *a plug, socket, or splice that electrically connects to a vehicle's headlight.* Rhodes discloses the "wire leading from the headlight switch to the right low beam headlight 53 is cut, forming wires 13A and 13B connected to pins 319 and 320, respectively." Ex. 1009 at 12:47–50 & Fig. 3B. Pins 319 and 320, moreover, are part of the "wire socket connector unit 300A of the harness 300 wired to the vehicle." *Id*. at 12:59-63 & Fig. 3A. Thus, this limitation is met at least by pin 320 of wire socket connector unit 300A, which is connected to headlight 53 through wire 13B. Ex. 1014 at ¶ 89.

Id. at 40–41. Dr. Neuhalfen's testimony mirrors closely the above excerpt from the Petition, and additionally notes that "[t]o achieve blacking out of the headlights, the auxiliary light harness of Rhodes has a connection to the vehicle headlight." Ex. 1014 ¶ 89.

As is apparent from Douglas' contentions and Dr. Neuhalfen's testimony, it is the splice connecting wire 13B to the wire of pin 320 that electrically connects harness 300 to headlight 53 in Rhodes. That is to say, because it provides the connection to the headlight, the splice necessarily serves as the "headlight connector" under Douglas' theory of anticipation. As explained above, however, the broadest reasonable interpretation of "headlight connector" does not include splices.

Douglas offers in its Reply to Patent Owner's Response a revised reading of Rhodes. First, Douglas attempts to massage Rhodes' teachings as to pin 320, emphasizing that "Pin 320 is part of Rhodes' wire ***socket*** connector 300A and ***electrically connects*** to the vehicle's OEM headlight." Pet. Reply 9. Second, Douglas proposes, for the first time, that to the extent

pin 320 does not disclose the "headlight connector," pin 420 satisfies this limitation.

We do not find Douglas' arguments persuasive. As an initial matter, we observe that Douglas' attempt, in its Reply, to change its unpatentability argument from relying on the splice between wire 13B and the wire of pin 320 as meeting the "headlight connector" limitation, to asserting that because pin 320 is part of a socket connector, and is (independent of that socket) connected to headlight 53, it satisfies that limitation, is untimely. Setting aside the untimeliness of Douglas' position, it nevertheless remains the case that even under Douglas' new reading of Rhodes, it is the splice between wire 13B and the wire of pin 320—and not pin 320 itself—that electrically connects Rhodes' light harness to headlight 53. Stated differently, Douglas does not offer, and we do not identify, any basis for finding that connector unit 300A, or pin 320, is a *socket that electrically connects to* headlight 53. *See* Tr. 17:19–20 ("The splices occur where the actual harness is wired into the lights.).

In apparent recognition of the fact that pin 320 is not a plug or socket that electrically connects to headlight 53, Douglas asserts in its Reply that pin 420 satisfies the "headlight connector" limitation of claim 1. But Douglas does not identify any support in the Petition for the proposition that pin 420 is a "headlight connector." We thus reject Douglas' belated attempt to rewrite its asserted grounds of unpatentability based on Rhodes.

Accordingly, we agree with Meyer that pin 320 of Rhodes does not read on the recited "headlight connector" because pin 320 is connected to

the vehicle headlight via an electrical splice, rather than a socket or plug. PO Resp. at 16. Furthermore, because Douglas relies on the same (nearly verbatim) reasoning with regard to its contention that pin 319 of Rhodes teaches the "first power connector" limitation of claim 1 (Pet. 41; Ex. 1014 ¶ 90), we likewise agree with Meyer that pin 319 of Rhodes does not read on the recited "first power connector" because it is spliced to wire 13A, which leads to the headlight switch, and is not connected to a headlight plug. PO Resp. at 17.

Claims 2, 4, 5, 28–30, 32, 33, 36, 38, 39, and 44

Because claims 2, 4, 5, 28–30, 32, 33, 36, 38, 39, and 44 each depend, either directly or indirectly from claim 1, for the reasons set forth above with respect to claim 1, we conclude that a preponderance of the evidence does not support Douglas' contention that claims 2, 4, 5, 28–30, 32, 33, 36, 38, 39, and 44 are anticipated by Rhodes.

G. Obviousness Grounds of Unpatentability Based on Rhodes and Möller

Douglas asserts that claims 4, 28, 36, and 43, which depend directly or indirectly from claim 1, are unpatentable under § 103(a) as obvious in view of Rhodes and Möller. Pet. 50–52.

Because Douglas does not present evidence or argument that addresses the deficiencies discussed above with regard to claim 1, for the reasons set forth above, we conclude that Douglas has not shown by a preponderance of the evidence that claims 4, 28, 36, and 43 are unpatentable based on Rhodes and Möller.

H. Obviousness Grounds of Unpatentability Based on Rhodes and Plyler

Douglas asserts that claims 5, 29, 31, and 48–54, which depend directly or indirectly from claim 1, are unpatentable under § 103(a) as obvious in view of Rhodes and Plyler. Pet. 52–57.

Because Douglas does not present evidence or argument that addresses the deficiencies discussed above with regard to claim 1, for the reasons set forth above, we conclude that Douglas has not shown by a preponderance of the evidence that claims 5, 29, 31, and 48–54 are unpatentable based on Rhodes and Plyler.

I. Obviousness Grounds of Unpatentability Based on Rhodes, Möller, and Plyler

Douglas asserts that claims 5–8, which depend indirectly from claim 1, are unpatentable under § 103(a) as obvious in view of Rhodes, Möller, and Plyler. Pet. 57–59.

Because Douglas does not present evidence or argument that addresses the deficiencies discussed above with regard to claim 1, for the reasons set forth above, we conclude that Douglas has not shown by a preponderance of the evidence that claims 5–8 are unpatentable based on Rhodes, Möller, and Plyler.

J. Meyer's Motion to File a Request for Certificate of Correction

In its Motion, Meyer requests a certificate of correction for the '829 patent to correct several errors, including: (1) correcting claim 35 to depend from claim 1, rather than claim 8; (2) correcting claim 35 to recite "preprogramed" in lieu of "programmed"; and (3) correcting claim 36 to recite "programmable" instead of "preprogrammable." Mot. Correction 3.

Douglas opposes Meyer's Motion and asserts that the fact that Meyer did not seek authorization to file a request for certification of correction until after institution, coupled with the broadening nature of the proposed correction to claim 35, warrants denial of Meyer's Motion at this time. Opp. Correction 2.

We agree with Douglas and are persuaded, in view of the broadening nature of the correction sought, that Meyer's Motion should not be considered until this proceeding is completed. The '829 patent issued on July 24, 2001 (Ex. 1001 [45]), and Meyer sued Douglas in district court for infringement of the '829 patent on May 6, 2015 (Pet. 1). We instituted *inter partes* review of the '829 patent on March 3, 2016. Dec. 1. Meyer filed its Motion for the authorization to file a request for a certificate of correction on July 13, 2016. Because Douglas challenged, and we instituted *inter partes* review of, the '822 patent based on the claims that are officially in the patent, we determine that authorizing Meyer to file a request for certificate of correction to include a substantive broadening change to claim 35, at this late stage in the proceeding, would unfairly prejudice Douglas.

In making this determination, we note that our decision in no way imperils or impedes Meyer from filing a request for a certificate of correction subsequent to the completion of this proceeding. Rather, we simply decide that, given the substantive and broadening nature of the correction sought, it would unfairly prejudice Douglas to authorize Meyer to file such a request at this time.

Meyer contends that because Douglas challenged the patentability of claim 36 in its Petition, Douglas should have recognized the purported printing errors in the issued claims of the ’829 patent at that time, and thus authorizing Meyer to file a request for a certificate of correction carries no prejudice. Mot. Correction 3–4. But the scope of Douglas’s Petition was limited to challenging the claims that are officially in the ’829 patent, as required by 35 U.S.C. § 311(b), and not the claims that allegedly should have, but did not, issue. Opp. Correction 3. Moreover, the fact that Meyer did not seek to correct its patent for more than fifteen years from issuance, and sued for infringement based on the issued claims would have suggested to Douglas that no correction to the patent was necessary.

Neither do we find persuasive Meyer’s assertion that Douglas would not be prejudiced by the proposed corrections because Douglas treated the terms “programed,” “preprogramed,” “programmable,” and “preprogrammable” the same in analyzing the claims of the ’829 patent in the Petition. Mot. Correction 4–5. Even were we to agree that Douglas attributed the same meaning to each of these claim terms in the Petition, the fact remains that Meyer seeks to change the dependency of claim 35 from

depending from claim 8 to claim 1, a change that would dramatically broaden the scope of claim 35. As Douglas points out, it elected not to challenge claim 35 in its Petition precisely because of the narrow scope of that claim; broadening the scope of claim 35 subsequent to institution would unfairly prejudice Douglas. Opp. Correction 3.

Meyer attempts to align its position with the patent owner in *Alarm.com v. Vivint, Inc.*, Case IPR2015-01995 (PTAB Jan. 28, 2016) (Paper 10), while distinguishing the instant case from *Kingston Technology Co. v. CATR Co.*, Case IPR2015-00559 (PTAB Nov. 6, 2015) (Paper 44). Mot. Correction 3–5. We recognize Meyer's contentions, but do not find them persuasive. In particular, we observe that Meyer's posture in the instant case more closely resembles that of the patent owner in *Kingston Technology*, than in *Alarm.com*, precisely because review had been instituted prior to Meyer's Motion for authorization to file a request for certificate of correction. *Compare Kingston Tech.*, IPR2015-00559, slip op. at 3 (Paper 44) ("On May 11, 2015, we issued our Decision Instituting an *inter partes* review. . . . Patent Owner waited until July 2015 to request correction."), *with Alarm.com*, IPR2015-01995, slip op. at 3 (Paper 10) ("[W]e hereby exercise jurisdiction over the Requests, filed as they were after the Petitions in these proceedings, pending our determination whether or not to institute *inter partes* review.").

Accordingly, for the reasons set forth above, we deny Meyer's Motion for the authorization to file a Request for a Certificate of Correction at this time. We observe, however, that Meyer may file a request for a certificate

of correction subsequent to the conclusion of this proceeding with the appropriate deciding official. *See* MPEP §§ 1002.02(b) and 1003.

K. Douglas' Motion to Exclude

Petitioner moves to exclude Exhibits 2001–2015, 2018–2020, and 2023. We find it unnecessary to consider the specific objections to the admissibility of these Exhibits, because we do not rely on any of the above referenced Exhibits in our Decision.

Accordingly, we *dismiss* Petitioner's Motion to Exclude.

III. CONCLUSION

For the foregoing reasons, we determine that Douglas has shown by a preponderance of the evidence that claims 1, 2, 4–7, 28–31, 36, 38, 39, 43, and 44 are unpatentable. We determine, however, that Douglas has not shown by a preponderance of the evidence that claims 8, 32, 33, and 48–54 are unpatentable.

IV. ORDER

It is

ORDERED that claims 1, 2, 4–7, 28–31, 36, 38, 39, 43, and 44 of the '829 patent are unpatentable;

FURTHER ORDERED Meyer's Motion Requesting Certificate of Correction is denied;

FURTHER ORDERED Douglas' Motion to Exclude is dismissed;

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

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