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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PAULUS HENRICUS ANTONIUS DAMINK

Appeal 2018-008850
Application 12/994,901
Technology Center 2600

Before ST. JOHN COURTENAY III, NATHAN A. ENGELS, and
MONICA S. ULLAGADDI, *Administrative Patent Judges*.

COURTENAY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ appeals under 35 U.S.C. § 134(a) from a Final rejection of claims 1–13, 15, 16, 18, and 19. Claims 14 and 17 are canceled. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). According to Appellant, the real party in interest is Philips Lighting Holding B.V. *See* Appeal Br. 6.

STATEMENT OF THE CASE

Invention

The disclosed and claimed invention on appeal “relates to an optical receiver for receiving visible light. More specifically, the invention relates to an optical receiver comprising a photo detector configured for detecting an intensity modulated signal in visible light.” (Spec. 1).

Illustrative Claim 1

1. An optical receiver for receiving visible light emitted by a light source, said optical receiver comprising:

an optical intensity modulation filter configured to filter an intensity modulated signal from the visible light *by distinguishing a first modulation frequency at which intensity of at least one carrier wave of the visible light is modulated in accordance with the intensity modulated signal from at least one other intensity modulation frequency of said at least one carrier wave,*

wherein the intensity modulated signal comprises an identification code modulating the visible light for identifying the light source; and

a photo detector that detects the filtered intensity modulated signal.

See Appeal Br. 23 (Claims Appendix). Emphasis added to new language added by amendment to claim 1, subsequent to prior PTAB Decision 2013-010370, mailed Sept. 2, 2016.

We additionally note that the rejection of claims 1, 2, 7, 9–11, and 14, as considered in our prior Decision 2013-010370 (p. 2) (i.e., over Nakagawa and Schenk et al. (WIPO publication No. WO 2008/155697 A2; Dec. 24,

2008)) **differs** from the rejections presented in the instant appeal, as detailed in the following section:

Rejections

- A. Claims 1, 2, 7, and 9–11 are rejected under 35 U.S.C. § 103(a) as being obvious over the combined teachings and suggestions of Nakagawa et al., US Patent App. Pub. No. 2006/0056855 A1; Mar. 16, 2006 (hereinafter “Nakagawa”), Perkins et al., US Patent App. Pub. No. 2002/0089722 A1; July 11, 2002 (hereinafter “Perkins”), and Lux et al., US 4,871,907; Oct. 3, 1989 (hereinafter “Lux”).
- B. Claims 3–5, and 12 are rejected under 35 U.S.C. § 103(a) as being obvious over the combined teachings of Nakagawa, Perkins, Lux, and further in view of Koncen, US Patent No. 3,743,835; July 3, 1973 (hereinafter “Koncen”).
- C. Claim 8 is rejected under 35 U.S.C. § 103(a) as being obvious over the combined teachings of Nakagawa, Perkins, Lux, and Nilsson et al., US Patent No. 4,476,875; Oct. 16, 1984 (hereinafter “Nilsson”).
- D. Claims 6 and 13 are rejected under 35 U.S.C. § 103(a) as being obvious over the combined teachings of Nakagawa, Perkins, Lux, Koncen, and further in view of C. W. Hoover Jr. et al., “System Design of the Flying Spot Store,” THE BELL SYSTEM TECHNICAL JOURNAL, pp. 365–401, March 1959 (hereinafter “Hoover”).
- E. Claim 15 is rejected under 35 U.S.C. § 103(a) as being obvious over the combined teachings of Nakagawa, Perkins, Lux, Koncen, and further in view of Suzuki et al., US Patent No. 4,492,869; Jan. 8, 1985 (hereinafter “Suzuki”).

- F. Claim 16 is rejected under 35 U.S.C. § 103(a) as being obvious over the combined teachings of Nakagawa, Perkins, Lux, and further in view of Sarashina, U.S. Patent App. Pub. No. 2009/0208213 A1; Aug. 20, 2009 (hereinafter “Sarashina”).
- G. Claims 18 and 19 are rejected under 35 U.S.C. § 103(a) as being obvious over the combined teachings of Nakagawa, Perkins, Lux, and further in view of Broyde et al., US Patent App. Pub. No. 2008/0063404 A1; Mar. 13, 2008 (hereinafter “Broyde”).

Prior PTAB Decision

Appeal No. 2013-010370, corresponding to instant Application No. 12/994,901, decided September 2, 2016 (Examiner Affirmed).

ANALYSIS

We have considered all of Appellant’s arguments and any evidence presented. We highlight and address specific findings and arguments for emphasis in our analysis below.

Combinability of the Nakagawa, Perkins, and Lux References

Rejection A of Independent Claims 1 and 9

Appellant urges that the Examiner has erred by improperly combining the cited references and has relied upon impermissible hindsight. *See* Appeal Br. 13. Therefore, we begin our analysis by reviewing the motivation statements and the evidence relied upon by the Examiner to support the combination of Nakagawa, Perkins, and Lux in the rejection of independent claims 1 and 9.

Our reviewing courts provide guidance: “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007), *quoting In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

Here, regarding the claimed *identification code*, the Examiner finds Nakagawa does not teach “wherein the intensity modulated signal comprises **an identification code** modulating the visible light for identifying the light source,” as recited in claim 1 (emphasis added). *See* Final Act. 3.

However, the Examiner finds Perkins teaches:

an optical receiver (portable receiver, Fig. 1, #3) for receiving an intensity modulated signal (signal, Fig. 1, #2; Amplitude modulated, Par. 31), wherein the intensity modulated signal comprises **an identification code** modulating the visible light for identifying the light source (unique address, Par. 31; address is *a unique identification code* of light fixture 1, Par. 25, Fig. 1; Par 34; Claim 2), *because this allows a receiver to communicate with various light sources within a structure* (Par. 34)

Final Act. 3 (emphasis added).

Thus, the Examiner finds an artisan would have been motivated to modify Nakagawa’s optical receiver 213 (Fig. 7, “light receiving unit” 213) with the features of Perkins receiver (Fig. 1, Portable Receiver 3²), such that

² *See* Perkins ¶ 32: “Preferably, the **receiver 3** is portable and is built into a watch or similar piece of jewelry, a cellular telephone, or a portable or hand-held computing device such as a laptop computer or a Personal Digital Assistant (PDA). Alternatively, the receiver 3 can be configured to reside in a device that is not typically moved.” (emphasis added).

“the intensity modulated signal comprises **an identification code** modulating the visible light for identifying the light source” (claim 1), “*because this allows a receiver to communicate with various light sources within a structure,*” as taught by Perkins. Final Act. 3 (emphasis added).

In reviewing the Examiner’s first stated motivation for the proffered combination of Nakagawa and Perkins (Final Act. 3), we find Nakagawa discloses two light receiving units: 213 and 221. *See* Figure 7.

Nakagawa depicts light receiving unit 213 as an integral part of illumination side communication device 201 that receives uplink signals from terminal side communication device 202.

Light receiving unit 221 is depicted as an integral part of terminal side communication device 202, as shown in Nakagawa’s Figure 7, and as reproduced below:

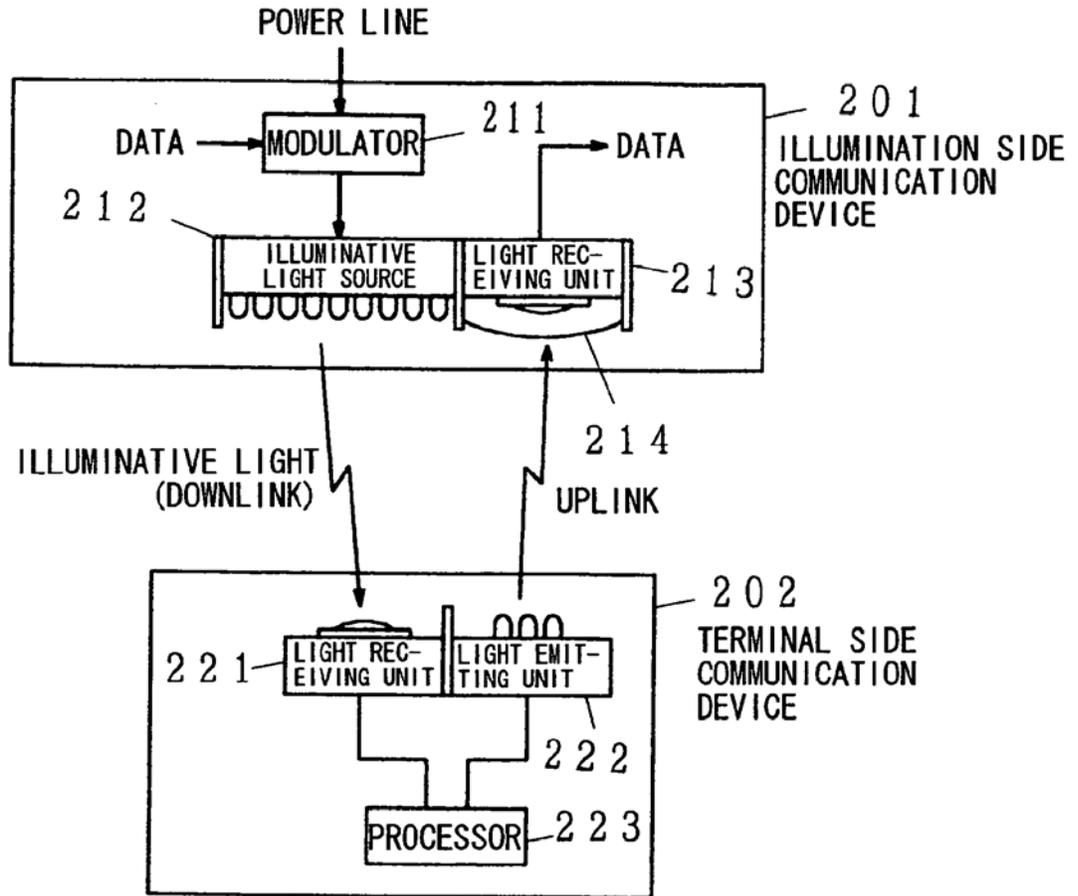


FIG. 7

Nakagawa's Figure 7 is depicted above showing the downlink illuminative light emanating from illuminative light source 212 that is received by light receiving unit 221, which is an integral part of terminal side communication device 202.

We emphasize that terminal side communication unit 202 (containing light receiving unit 221) receives the **downlink** modulated light data from illuminative light source 212 (e.g., a ceiling light fixture — *see* Nakagawa, Fig. 15), that is an integral part of illumination side communication device 201. *See* Nakagawa, Fig. 7.

In reviewing Nakagawa, we find that light receiving unit 221, as contained within terminal side communication device 202 (Fig. 7), already receives *communication from various light sources (201) within a structure*, as expressly depicted in Nakagawa's Figure 15, as reproduced below:

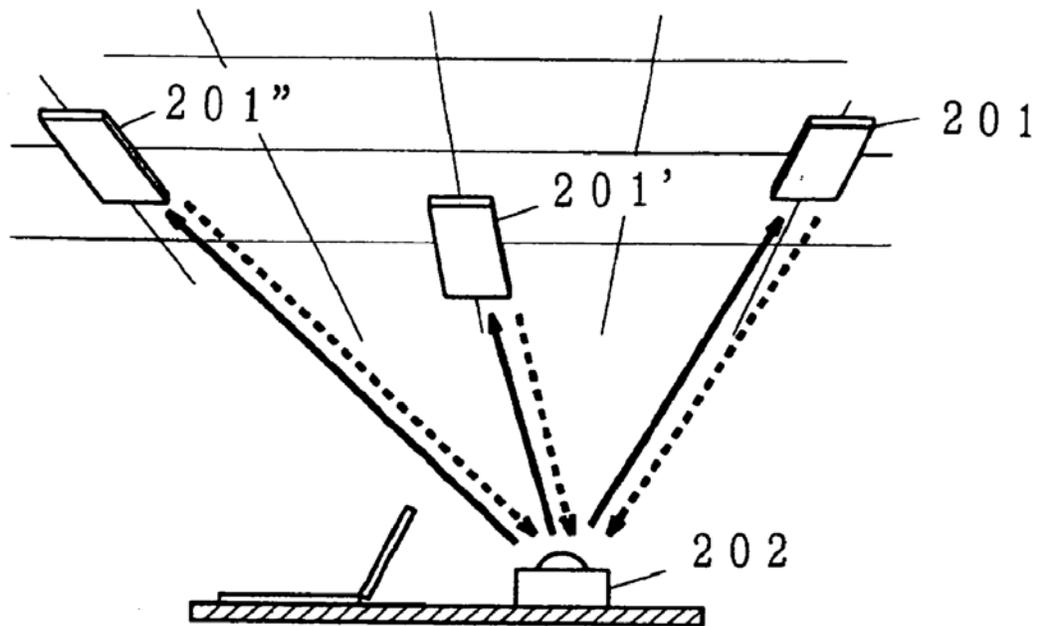


FIG. 15

Nakagawa's Figure 15 is reproduced above illustrating bidirectional communications between multiple light sources 201 and terminal side communication unit 202 (containing light receiving unit 221 — *see* Fig. 7).

Given that the Examiner (Final Act. 3) is reading the claim language on the *uplink* side of Nakagawa's Figure 7, which includes optical filter 214, we note that Figure 15 expressly depicts *bidirectional* communications between multiple light sources 201 and terminal side communication device 202, with both uplinks and downlinks, as illustrated by the solid black line "uplinks" and the dotted line "downlink" arrows.

Given this evidence, we find insufficient support for the Examiner's proffered motivation that an artisan would have been motivated to modify Nakagawa's optical receiver 213 (Fig. 7, "light receiving unit" 213) with the features of Perkins receiver (Fig. 1, Portable Receiver 3³), such that "the intensity modulated signal comprises **an identification code** modulating the visible light for identifying the light source" (claim 1), "**because this allows a receiver to communicate with various light sources within a structure,**" as taught by Perkins. Final Act. 3 (emphasis added).

As expressly shown in Nakagawa's Figure 15, terminal side communication unit 202 (containing light receiving unit 221 — Fig. 7) **already communicates with various light sources within a structure.** Moreover, from the perspective of terminal side communication unit 202 (containing light emitting unit 222 for the uplink — Fig. 7), the Examiner has not fully developed the record to show why terminal side communication device 202 would not be fully capable of communicating (via downlink and uplink) with light sources that are located in other rooms

³ See Perkins ¶ 32 ("Preferably, the **receiver 3** is portable and is built into a watch or similar piece of jewelry, a cellular telephone, or a portable or hand-held computing device such as a laptop computer or a Personal Digital Assistant (PDA). Alternatively, the receiver 3 can be configured to reside in a device that is not typically moved.") (emphasis added).

within the building. *See also* Nakagawa's Figures 31 and 44 (each depicting *multiple* light sources (e.g., light sources 414 and 522 respectively) in communication with a terminal side communication device).

Therefore, we find that the Examiner's first-stated motivation statement (Final Act. 3–4) is not supported by a preponderance of the evidence, because we find an artisan would not have been motivated to look to the secondary Perkins reference to solve a purported problem (i.e., *allowing a receiver to communicate with various light sources within a structure*) that has already been fully addressed and solved by Nakagawa (*See* Figures 7, 15, 31, 44). Accordingly, the Examiner's first proffered motivation statement (Final Act. 3–4) is unconvincing, and appears to be grounded on impermissible hindsight, as alleged by Appellant, and as discussed in more detail below. *See* Appeal Br. 13.

Regarding the claim 1 language added by amendment *after* prior PTAB appeal 2013-010370:

by distinguishing a first modulation frequency at which intensity of at least one carrier wave of the visible light is modulated in accordance with the intensity modulated signal from at least one other intensity modulation frequency of said at least one carrier wave

The Examiner finds: “Nakagawa does not teach that the optical intensity modulation filter filters *by distinguishing a first modulation frequency at which intensity of at least one carrier wave of the visible light is modulated in accordance with the intensity modulated signal from at least one other intensity modulation frequency of said at least one carrier wave.*” Final Act. 4 (Claim 1 language emphasis added) (underlining omitted).

However, the Examiner finds that an artisan would have been motivated to modify uplink filter 214 disclosed in Nakagawa's Figure 7, with Lux's optical intensity modulation filter (filter 64a for detector 68a, Fig. 2a —see Final Act. 3–4) such that the modified Nakagawa filter would filter as claimed:

by distinguishing a first modulation frequency at which intensity of at least one carrier wave of the visible light is modulated in accordance with the intensity modulated signal from at least one other intensity modulation frequency of said at least one carrier wave, because such a transmission and reception system arrangement is well-known in the art and allows multiple[] signals to be transmitted to multiple detection devices using a common carrier wave, therefore no unexpected results would occur.

Final Act. 4–5 (Claim 1 language emphasis added).

However, Appellant disagrees:

Thus, in accordance with Lux, different intensity modulations are filtered to determine which modulations are present and which are absent for purposes of measuring the movement of a plate. Perkins, cited as teaching the inclusion of the claimed identification code, teaches the transmission of an address that can indicate the terrestrial location of a light source. *See* Perkins, para. 0025. In particular, Perkins is directed to precisely locating a particular person or object. *See* Perkins, paras. 0004, 0019.

Appeal Br. 13.

Appellant further explains:

Preliminarily, the Appellant respectfully submits that it is highly unlikely that one of ordinary skill in the art would look to a system that measures plate movements for purposes of modifying a wireless light communication system. Furthermore, one of ordinary skill in the art would not modify the wireless light communication system of Nakagawa/Perkins to include a modulation frequency filter, as claimed, to “*allow multiple signals to be transmitted to multiple detection devices using a common carrier wave,*” as asserted in the Office Action.

Id. (emphasis added).

Appellant further argues:

Firstly, *Perkins already permits multiple signals to be transmitted to multiple detection devices*. Secondly, Lux discloses that each receiver is dedicated to detecting only the frequency associated with a particular hole in a plate. Extrapolating this concept of Lux so that each light source is dedicated to transmitting data to only one particular receiver would subvert the entire principle of operation of Perkins, as Perkins is directed to allowing any device to interact with any of the light sources for purposes of determining its location. Thus, one of ordinary skill in the art would not incorporate a modulation frequency filter within the system of Nakagawa/Perkins, as asserted in the Office Action. Indeed, any assertion that the claimed filtering would be obvious in view of the references is clearly based on improper hindsight of the present application. “*Hindsight is impermissible when an examiner rejects an application in reliance upon teachings not drawn from any prior art disclosure, but from the applicant’s own disclosure.*”

Id. (emphasis added; boldface omitted).

The Examiner disagrees and responds in the Answer that “[i]n this case, the motivation for one of ordinary skill in the art to turn to reference Lux when modifying Nakagawa is taken directly from the cited references themselves.” Ans. 18–19. In particular, the Examiner finds an artisan “would be reasonably motivated to modify Nakagawa include a filtering arrangement similar to the one described in Lux *in order to gain the benefits of allowing multiple signals to be transmitted to multiple detection devices using a common carrier wave.*” *Id.* at 21 (emphasis added).

However, similar to our discussion above regarding the Examiner’s first motivation statement, we find a preponderance of the evidence supports Appellant’s contention that “*Perkins already permits multiple signals to be transmitted to multiple detection devices.*” Appeal Br. 13 (emphasis added). *See, e.g., Perkins* ¶ 23 (“The optical transmitters (light sources) and receivers of the invention provide location information to the location devices operating indoors.” (underline added regarding plural transmitters and receivers)).

Therefore, we agree with Appellant that an artisan would have had no reason to look to the tertiary Lux reference to solve a purported problem already addressed by the secondary Perkins reference. Moreover, we find the Examiner’s reliance on *In re Fulton*, (391 F.3d 1195, 1201 (Fed. Cir. 2004)) regarding “teaching away” is misplaced. *See* Ans. 21.

Given the aforementioned evidence of record, we do not see how an artisan possessing *only* the knowledge of Nakagawa, Perkins, and Lux, would have *reasonably* combined the references in the manner proffered by the Examiner (Final Act. 3–5), to arrive at Appellant’s claimed invention,

without having the benefit of Appellant's claims and Specification to use as a guide.

“Care must be taken to avoid hindsight reconstruction by using ‘the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.’” *Grain Processing Corp. v. American-Maize Prods. Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988) (quoting *Orthopedic Equip Co. v. United States*, 702 F.2d 1005, 1012 (Fed. Cir. 1983)). “The mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art.” MPEP § 2143.01 (III) (citing *KSR*, 550 U.S. at 417). The use of the present application as a “road map” for selecting and combining prior art disclosures is wholly improper. See *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138 (Fed. Cir. 1985) (stating that “[t]he invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time”); see also *In re Fritch*, 972 F.2d 1260 (Fed. Cir. 1992); MPEP § 2141.01(111); MPEP § 2142.

In *KSR*, the Supreme Court guides that “[a] factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of argument reliant upon *ex post* reasoning.” *KSR*, 550 U.S. at 421 (citing *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 36 (1966)). Nevertheless, the Supreme Court also qualified the issue of hindsight by stating: “[r]igid preventative rules that deny factfinders recourse to common sense, however, are neither necessary under our case law nor consistent with it.” *KSR*, 550 U.S. at 421.

In considering Appellant’s hindsight argument, we are particularly mindful that Patent Examiners begin the examination of the patent application by searching for prior art *using the Applicant’s own claims*. Although there appears to be no alternative manner in which to efficiently search for the closest prior art, this *initial step* in the examination process is necessarily hindsight *per se*, because the Examiner has the full benefit of using the Applicant’s claims and Specification *as a guide* in conducting the search.

After the initial step of searching locates the closest references to the claimed invention, the Examiner must then *assume the role of the hypothetical Person Having Ordinary Skill In The Art (PHOSITA) having full knowledge of the relevant prior art, but no knowledge of the claimed and disclosed invention under examination.*⁴

It is unfortunately too easy for the Examiner to fall into the trap of omitting this *second essential step* of examination, which *requires* the Examiner to *assume the perspective of the PHOSITA at the time of the invention, as if the application and claims under examination did not exist*. Because of the distortion caused by hindsight bias in the initial examination searching step, we must be especially cautious of suspect “*ex post* reasoning.” *KSR*, 550 U.S. at 421.

⁴ “The person of ordinary skill in the art [‘PHOSITA’] is a hypothetical person who is presumed to know the relevant prior art.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (*citing Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)).

Here, post-*KSR*, we see the hindsight question before us essentially as a balancing test: We must evaluate whether the Examiner’s proffered combination of references is merely: (1) “the predictable use of prior art elements according to their established functions” (*KSR*, 550 U.S. at 417), or, (2) would an artisan have *reasonably* combined the cited references in the manner proffered by the Examiner without having the benefit of Appellant’s claims and Specification to use as a guide?

After reviewing the respective teachings and suggestions of the cited Nakagawa, Perkins, and Lux references (as discussed above), we find the evidence more strongly answers the second prong of the balancing test in the negative, leading us to conclude, based upon a preponderance of the evidence, that the Examiner has relied upon impermissible hindsight reconstruction in formulating the rejection. Even if *arguendo* (without deciding) the Examiner’s proffered combination of Nakagawa, Perkins, and Lux would have taught or suggested all the claim limitations, we nevertheless find the Examiner’s proffered rationales for the combinations are unconvincing and unsupported by a preponderance of the evidence. *See* Final Act. 3–5.

CONCLUSION

For at least the aforementioned reasons, and on this record, we are persuaded the Examiner erred. We find a preponderance of the evidence supports the Appellant’s contentions for the reasons discussed above.

Therefore, we are constrained on this record to reverse each of Rejections A, B, C, D, E, F, and G under 35 U.S.C. § 103(a).

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 2, 7, 9–11	103(a)	Nakagawa, Perkins, Lux		1, 2, 7, 9–11
3–5, 12	103(a)	Nakagawa, Perkins, Lux, Koncen		3–5, 12
8	103(a)	Nakagawa, Perkins, Lux, Nilsson		8
6, 13	103(a)	Nakagawa, Perkins, Lux, Koncen, Hoover		6, 13
15	103(a)	Nakagawa, Perkins, Lux, Koncen, Suzuki		15
16	103(a)	Nakagawa, Perkins, Lux, Sarashina		16
18, 19	103(a)	Nakagawa, Perkins, Lux, Broyde		18, 19
Overall Outcome				1–13, 15, 16, 18, 19

FINALITY AND RESPONSE

REVERSED