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Paper 16
Entered: April 4, 2025

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SIEMENS MOBILITY, INC., GROUND TRANSPORTATION SYSTEMS USA, INC. and PIPER NETWORKS, INC.,
Petitioners,

v.

METROM RAIL, LLC,
Patent Owner.

IPR2024-00947
Patent 9,731,738 B2

Before SCOTT R. BOALICK, *Chief Administrative Patent Judge*, MICHAEL P. TIERNEY and MICHAEL W. KIM, *Vice Chief Administrative Patent Judges.*

TIERNEY, *Vice Chief Administrative Patent Judge*.

DECISION
Delegated Director Review of
Decision Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.75

I. INTRODUCTION

The Acting Director delegated Director Review of the Decision Denying Institution in this proceeding to the Delegated Review Panel to address two questions. Paper 14 ("DRP Order"). Having reviewed the record, we conclude that a reference appearing only in an Examiner's search history is not deemed previously presented art under 35 U.S.C. § 325(d), and that the reference asserted in this proceeding, Kane, is substantially the same as one of the references considered during prosecution, Knott. We therefore deny the request to reverse the Board's denial of institution.

A. BACKGROUND

On May 22, 2024, Siemens Mobility, Inc., Ground Transportation Systems USA Inc., and Piper Networks, Inc. (collectively, "Petitioners") filed a Petition (Paper 4, "Pet.") requesting *inter partes* review of claims 1–18 of U.S. Patent 9,731,738 B2 (Ex. 1001). Metrom Rail, LLC ("Patent Owner") filed a Preliminary Response (Paper 8, "Prelim. Resp."). On November 19, 2024, the Board denied institution, exercising discretion under § 325(d). Paper 12 ("Panel Dec."). On December 19, 2024, Petitioners filed a Request for Director Review. Paper 13 ("Req."). The Request argues that: (1) a reference appearing only in an Examiner's search history should not be deemed "previously presented art" under § 325; (2) the combination asserted here, Kane[1] and Heddebaut,[2] is not substantially the same as the combination applied by the Examiner during prosecution, Knott[3] and

[1] US 6,957,131 B2 (Ex. 1005).

[2] US Pat. Pub. No. 2006/0151672 A1 (Ex. 1006).

[3] US Pat. Pub. No. 2010/0063656 A1 (Ex. 2001).

Soderi[4]; and (3) the Petition demonstrated that, if the Examiner considered Kane, it was error to conclude that Kane did not disclose claim limitation 1H. *See generally* Req.

On March 6, 2025, the Acting Director delegated review to a Delegated Rehearing Panel ("DRP") and instructed the DRP to determine: "(1) whether a reference appearing only in an Examiner's search history is deemed previously presented art under 35 U.S.C. § 325(d); and (2) whether Kane is substantially the same as Knott, and if not, whether the same or substantially the same obviousness arguments were previously presented to the Office." Paper 14.

B. THE '738 PATENT

The '738 patent titled, "Rail Vehicle Signal Enforcement and Separation Control," describes a "system for vehicle management" that "includes a control signal interface subsystem and a vehicle-mounted subsystem" that "interfaces with a braking system of the vehicle," "determines the distance between it and the control signal interface subsystem based on the time-of-flight of at least one communication between the subsystems," and "can cause the braking system of the vehicle to activate if the distance between the vehicle-mounted subsystem and the control signal interface subsystem is less than a threshold." Ex. 1001, codes (54), (57); *see also id.* at 2:10–6:3 (summary section).

The specification discusses situations where "rail vehicles may not have a clear view of the sky, and . . . may not be traceable by GPS methods," making it "difficult . . . to know the location, speed, and position of the rail

[4] US Pat. Pub. No. 2013/0138276 A1 (Ex. 2002).

vehicle relative to other vehicles on the train track with the accuracy necessary to operate safely and efficiently." *Id.* at 1:59–66. It addresses the need for a "rail vehicle control system to properly enforce separation among rail vehicles on a railroad track if the precise location of each rail vehicle is not accurately known" where there may be a "degradation in accuracy" when "using the odometer in non-GPS areas." *Id.* at 1:66–2:4.

The '738 patent describes "a rail vehicle control system" that is "installable on a rail vehicle" and that "can include a collision avoidance system" and can "manage rail vehicle separation on a railroad track," as well as to "provide for a system for vehicle management." *Id.* at 2:10–13, 2:37–39, 3:54–55. The '738 patent purports to achieve this with a vehicle management control system that shares speed and location data of the vehicle with other peers to determine proper separation distance between the peers. *Id.* at 26:39–29:24. The '738 patent utilizes an ultra-wideband (UWB) network in "varying operating environments including ones with buildings and walls (which cause reflections), curved tunnels, and underground." *Id.* at 27:28–37. The UWB helps to "determin[e] range information" and "may be used to communicate data, such as: the VMCS's unique ID, a signal indication, a track number, a track direction, the vehicle speed, the vehicle direction of travel, or GPS information (position information and/or GPS clock value)." *Id.* at 27:37–42.

Independent claim 1 is illustrative and is reproduced below:

[1-Pre] 1. A system for evaluating vehicle operation compliance, wherein the system comprises:

[1A] a control signal interface subsystem; and

[1B] a vehicle-mounted subsystem configured to:

[1C] communicate with the control signal interface subsystem to receive information corresponding to a status of a control signal;

[1D] determine a rule for behavior of a vehicle according to the information corresponding to the status of the control signal; and

[1E] observe operation of the vehicle to evaluate compliance with the rule; wherein:

[1F] the control signal interface subsystem comprises an ultra-wideband (UWB) communications component;

[1G] the vehicle-mounted subsystem comprises an ultra-wideband (UWB) communications component; and

[1H] the vehicle-mounted subsystem and the control signal interface subsystem are further configured to communicate UWB signals carrying data pertinent to evaluating vehicle operation compliance, the data comprising at least one of: a unique ID associated with the vehicle-mounted subsystem, a signal indication, a track number, a track direction, speed, and direction of travel.

Ex. 1001, 33:13–37; *see also* Pet. 77 (numbering the claim limitations).

C. Relevant Prosecution History

The Examiner rejected then-pending independent claim 16 (renumbered at issuance as independent claim 1) as obvious over Knott and Soderi. Ex. 1002, 245–47. Then-pending claim 16 closely parallels issued claim 1. *Compare id.* at 224, *with* Ex. 1001, 33:13–37.[5]

[5] Applicant amended pending claim 16 before it was issued as claim 1 by eliminating the option for data carried by the UWB signals to include "positioning related information." Ex. 1002, 257. Although that amendment affected limitation 1H, the difference does not impact the issues before us.

The Examiner relied on Knott for most limitations. *Id.* at 245–46. Knott is a U.S. Patent Application titled "Train Control Method and System," published on March 11, 2010. Ex. 2001, codes (43), (54). It discloses sending signals to a train to provide "information and data for making control decisions regarding the train" as it approaches a portion of track. *Id.* ¶¶ 32, 41–42. Those signals may be sent from wayside transmitters. *Id.* ¶¶ 32, 37.

The Examiner stated that "Knott does not teach that both the control signal interface and the vehicle mounted subsystem have ultra-wideband (UWB) communications components configured to communicate UWB signals carrying data pertinent to evaluating vehicle operation compliance." Ex. 1002, 246. For that aspect of the claim, the Examiner relied on Soderi. *Id.* After amending then-pending claim 16, the Applicant argued that "Knott and Soderi do not teach or suggest, individually or in combination, communication of UWB signals carrying data that comprises 'at least one of: a unique ID associated with the vehicle mounted control system, a signal indication, a track number, a track direction, speed, and direction of travel.'" *Id.* at 268. In response, the Examiner issued a Notice of Allowance and gave Reasons for Allowance that agreed with Applicant's position. *Id.* at 279.

Although Kane was not discussed by the Examiner or Applicant, it appears in a search history report. *Id.* at 180, 186–87; *see* MPEP § 719.05 (9th ed. Rev. 01.2024). Specifically, Kane's patent number, "6957131," was included as part of one search query. *Id.* at 186–87. The Examiner's search notes indicate the query was included in "forward and backward searches." *Id.* at 180.

D. PETITIONERS' CHALLENGE

Petitioners assert that claim 1 would have been obvious over Kane and Heddebaut. Pet. 2, 7–27. Petitioners rely on Kane for most limitations. Pet. 12–27.

Kane is a U.S. patent titled "Positive Signal Comparator and Method," filed on November 21, 2002, and issued on October 18, 2005. Ex. 1005, codes (12), (22), (45), (54). Kane describes "[a] positive signal comparator system" including "a transceiver located on a train," "a wayside signal device," "an input device through which an operator enters a signal in response to the signal received from the wayside signal device," and "a controller including a signal comparator for determining if the signal input by the operator matches the signal received from the wayside signal device and taking corrective action if the operator fails to enter the proper signal." *Id.* at code (57); *see id.* at 1:66–2:12.

Petitioners map the claimed "vehicle-mounted subsystem" to Kane's controller 110, engineer/trainman pendants 120/130, transceiver 140, positioning system 150, database 160, tachometer 170, and brake interface 180, collectively. Pet. 13–14 (citing Ex. 1005, 1:66–2:12, 3:23–5:24, Fig. 1, claims 1 and 31; Ex. 1003 ¶¶ 100–104). As to limitation 1G, Petitioners submit that "Kane discloses using RF infrastructure for automatic updates" and that skilled artisans would have understood "that one type of 'radio frequency' communications that was well-known and well-suited as of September 3, 2013, was UWB." *Id.* at 21 (citing Ex. 1005, 7:25–30; Ex. 1003 ¶¶ 126–129). Petitioners argue that skilled artisans would have had reason "to use UWB for communications between the trains and wayside devices" because "UWB not only performs better [than traditional wireless

communications], but is simple in design and operating mode and limits the risk of interference with other wireless communications." *Id.* at 25; *accord id.* at 26–27 (providing additional reasons for skilled artisans to have adopted UWB communications).

For limitation 1H, Petitioners contend that the combination's UWB signals would carry the claimed data because "Kane discloses a response signal that includes at least a signal indication (e.g., 'medium approach medium') and a target speed (e.g., medium speed)." *Id.* at 23 (citing Ex. 1003 ¶¶ 132–133). Therefore, reason Petitioners, "Kane discloses radio-frequency signals carrying data pertinent to evaluating vehicle operation compliance, including at least two of the particular types of content specified in the claim (i.e., a signal indication and a track speed)." *Id.*

For the other claimed content types, Petitioners assert that Heddebaut discloses UWB signals "including at least an identifier and a message regarding the identity, speeds, positions, state of the trains and stations." *Id.* at 24 (citing Ex. 1006 ¶¶ 44–45, 48–49; Ex. 1003 ¶¶ 134–136).

E. The Panel's Decision Denying Institution

Considering Patent Owner's argument for discretionary denial under § 325(d), the Board panel held that Kane was previously before the Office because "the Examiner's search report . . . lists Kane's patent number on its face." Panel Dec. 12–13.

The panel further concluded that Kane and Heddebaut have substantially similar disclosures as Knott and Soderi. *Id.* at 14–17. It determined that the record did not reflect "any material differences between the references cited in the IPR, the arguments made in the IPR, and the

references and arguments presented during prosecution as to claim 1 of the '738 patent." *Id.* at 17.

Finally, the panel concluded that Petitioner had not shown that the Examiner materially erred when considering Knott and Soderi. *Id.* at 18–19.

F. PETITIONERS' DIRECTOR-REVIEW ARGUMENTS

Requesting Director review of the panel's institution denial, Petitioners raise three arguments: (1) that, as a matter of law and policy, Kane should not be considered previously presented art (Req. 8–12); (2) that the panel abused its discretion by finding that Kane and Heddebaut are substantially the same art as Knott and Soderi (*id.* at 12–14); and (3) that, regardless of the first two questions, the Petition demonstrated that the Kane–Heddebaut combination discloses the limitation that caused the Examiner to allow the claims (*id.* at 15).

As to considering art having been made of record when it appears only as part of a query in the Examiner's search history, Petitioners argue that standard would include huge numbers of references without a substantive basis. *Id.* at 9. They point out that an Examiner has specific procedures for making prior art "of record" in the prosecution. *Id.* at 10–11. And Petitioners submit that substantive evaluation should form the basis for deferring to prior Office decisions. *Id.* at 11.

As to the art asserted versus that considered during prosecution, Petitioners argue that the Examiner found that neither Knott nor Soderi discloses UWB signals carrying the claimed data types, whereas Kane discloses radio-frequency signals carrying a signal indication and track speed, and Heddebaut discloses UWB signals carrying additional data. *Id.* at 12–13. Petitioners argue also that they provided reasons beyond what the

Examiner considered regarding why skilled artisans would have combined Kane's and Heddebaut's teachings. *Id.* at 13–14.

Finally, as to demonstrating material error, Petitioners argue that because it shows that the asserted combination of Kane and Heddebaut discloses UWB signals carrying several of the claimed data types, the Petition establishes the Examiner erred. *Id.* at 15. In that regard, Petitioners note that the Examiner specifically allowed the claims after finding the prior art did not include UWB signals carrying data. *Id.*

G. Director's Delegation Order

Considering Petitioners' request, the Director delegated Director Review of the Institution Decision to a DRP to determine: "(1) whether a reference appearing only in an Examiner's search history is deemed previously presented art under 35 U.S.C. § 325(d); and (2) whether Kane is substantially the same as Knott, and if not, whether the same or substantially the same obviousness arguments were previously presented to the Office." Paper 14.

II. ANALYSIS

A. A Reference Appearing Only on the Examiner's Search Report Has Not Been "Made of Record"

As to the first question, we conclude that a reference appearing only in an Examiner's search history is not deemed previously presented art under 35 U.S.C. § 325(d).

The Board stated in *Advanced Bionics* that "[p]reviously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS), in

the prosecution history of the challenged patent." *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 7–8 (PTAB Feb. 13, 2020) (precedential). As described above, one of the Examiner's searches included Kane's patent number as a search term. Ex. 1002, 188–87. Patent Owner asserts that Kane was "arguably" considered by the Examiner because it "appeared in the Examiner's search report." Prelim. Resp. 6–7.

We do not agree with the original panel's conclusion that Kane was "previously before the Office." Panel Dec. 13. The panel did not explain that conclusion other than to note the above-quoted statement in *Advanced Bionics*. *Id.* We conclude that an examiner does not make a reference "of record" solely by including the reference in a search query. In this regard, we agree with Petitioners that, absent unusual circumstances which are not present here, "art made of record by the Examiner" is generally limited to references listed on a Notice of References Cited (form PTO-892), through which an Examiner identifies cited prior art or through an initialed Information Disclosure Statement. *See* MPEP § 1302.12 (9th ed. Rev. 01.2024) ("All references which have been cited by the examiner during the prosecution, including those appearing in Patent Trial and Appeal Board decisions or listed in the reissue oath, must be listed on either a form PTO-892 or on an Information Disclosure Statement (PTO/SB/08) and initialed."); *id.* § 707.05 ("Citation of References"); *see also* Req. 10–11. Examination procedures ensure any art appearing in an Office action will be "made of record." It is not enough that the Examiner used Kane's patent number as a search term because nothing about that use indicates to what degree the Examiner was presented with Kane's disclosures or reliably

indicates that the Examiner viewed Kane at all. *Cf.* MPEP § 707.05 ("The examiner must consider all the prior art references (alone and in combination) cited in the application or reexamination, including those cited by the applicant in a properly submitted Information Disclosure Statement."). The mere fact that Kane's patent number appears in the Examiner's search report is not sufficient to indicate that the Examiner considered Kane's disclosures for their substance. In other words, a reference appearing only on a search report is not enough.

B. KANE IS SUBSTANTIALLY THE SAME AS KNOTT

As to the second question, we conclude that Kane is substantially the same as Knott. Although Petitioners argue that the *combination* of Kane and Heddebaut raised in the IPR is the not the same as the *combination* of Knott and Soderi applied by the Examiner (*see* Req. 12–13), that is not the question we have been tasked with addressing.

Petitioners assert briefly that "Kane (like Heddebaut) expressly discloses the sole limitation the Examiner concluded was missing from Knott and Soderi." Req. 2. Even such a finding, however, would not resolve the question here. Rather, we focus exclusively on substantive differences between Kane and Knott. And we see nothing indicating that Kane's disclosures differ meaningfully from Knott's.

The Petition asserts that Kane's disclosure of "radio frequency" communications would have been understood to include any type of radio frequency communication components, and that skilled artisans as of the '738 patent's application would have understood UWB radio transmissions to be well suited to rail applications. Pet. 19–21 (addressing limitations 1F

and 1G). The problem with Petitioners' argument is that Kane does not disclose UWB communication any more than Knott.

Kane expressly discloses "radio frequency" communications. Ex. 1005, 10:34–35 (claim 33). Although Knott uses the more-generic term "wireless" for an exemplary receiver "to obtain data from the wayside signal S," it further describes that "any such receiver 14 is appropriate of picking up or otherwise obtaining a signal (or the signal data) from the wayside signal S." Ex. 2001 ¶ 37. Thus, Knott discloses the broad use of technology, similar in substantive scope to Petitioners' argument that Kane's disclosures include UWB communications. Moreover, Knott was published in 2010, nearly five years after Kane issued, and Petitioners have not explained adequately how the later publication that explicitly refers to the earlier one could have disclosed a narrower scope of communications. *Compare id.* at code (43), *with* Ex. 1005, code (45); *see also* Ex. 2001 ¶ 18 (citing Kane as a known way "for communicating with wayside equipment implementing safety features and controlling trains as they travel through the track network"). Thus, we do not agree with Petitioners that Kane discloses UWB communications any more robustly than Knott.

Addressing data carried by UWB signals (limitation 1H), Petitioners additionally assert that Kane discloses "at least two of the particular types of content specified in the claim (*i.e.*, a signal indication and a track speed)." Req. 13 (citing Pet. 23). The Petition asserts that Kane's train receives a response signal from wayside signal devices, and that the response "includes at least a signal indication (e.g., 'medium approach medium') and a target speed (e.g., medium speed)." Pet. 23. To do so, the Petition references the contentions that Kane discloses the train receiving "information

corresponding to a status of a control signal" (limitation 1C). *Id.* at 23 (referencing limitation 1C), 15 (citing Ex. 1005, 3:29–56, 5:59–64, 2:44-63), 17 (citing Ex. 1005, 6:55–67). Thus, the Petition asserts that data carried in UWB signals (limitation 1H) is satisfied by the same information received regarding a control signal (limitation 1C). That position is consistent with the claim language, in that the required UWB data (limitation 1H) may be satisfied by "a signal indication" and the received information (limitation 1C) must "correspond[] to a status of a control signal."

But Kane does not appear different in that way from Knott, which also discloses a train receiving information from a wayside signal "representing the condition or state of the signal itself or an indication of an action to be taken by an operator based upon the state or condition of the upcoming section of track." Ex. 2001 ¶ 31; *accord id.* ¶¶ 32 ("[T]he indication or aspect associated with the wayside signal S provides required information and data for making control decisions regarding the train TR as it approaches this next, upcoming block or portion of track T."), 37 (disclosing a receiver "to obtain data from the wayside signal S"), 42 (disclosing signals to "stop and proceed," "stop," "approach," and "restricting"). During prosecution, the Examiner applied Knott as disclosing limitation 1C ("receive information corresponding to a status of the control signal"). Ex. 1002, 246 (citing Ex. 2001 ¶ 37). We see little meaningful difference between Knott's disclosures in that regard and Kane's.

Although Petitioners rely on Kane's disclosures additionally for limitation 1H, they are the same disclosures relevant to limitation 1C. Pet. 23. Because we determine that the two references' disclosures relevant

to limitation 1C are substantially the same we also determine that Kane's disclosures relevant to limitation 1H are substantially the same as Knott's.

Accordingly, we conclude that, as to the Examiner's stated Reasons for Allowance, Kane is substantially the same as Knott.

III. CONCLUSION

We conclude that art "made of record" by an Examiner is generally limited to art the Examiner cites during prosecution, which will appear on a Notice of References Cited (form PTO-892) or through an initialed Information Disclosure Statement. Thus, Kane was not previously presented to the Office.

We additionally conclude, however, that Kane is substantially the same as Knott. Thus, we do not grant Petitioners' request to reverse the Board's denial of institution.

IV. ORDER

Accordingly, it is

ORDERED that rehearing is denied.

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