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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ADITYA R. KARNIK¹

Appeal 2012-011321
Application 12/195,737
Technology Center 2400

Before ST. JOHN COURTENAY III, THU A. DANG, and
LARRY J. HUME, *Administrative Patent Judges*.

HUME, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the final rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

¹ According to Appellant, the real party in interest is General Motors, Inc. App. Br. 3.

STATEMENT OF THE CASE²

The Invention

Appellant's invention relates to methods that adaptively verify data in resource constrained systems by employing an adaptive verification mode to balance cost, performance, and security requirements. Abstract.

Exemplary Claims

Claims 1, 12, and 16, reproduced below, are representative of the subject matter on appeal (*emphases* added to contested limitations):

1. *A method for authenticating messages received at a receiver device, said method comprising:*

establishing a belief level for senders of messages that are received at the receiver device as to the messages validity;

assigning the belief level to a scale where one end of the scale indicates a bona fide sender or message that will be accepted and the other end of the scale indicates a malicious sender or message that will be discarded;

selecting an authentication mode based at least in part on the belief level, wherein one authentication mode includes a blind accept mode for a belief level at or around the bona fide end of the scale, a discard mode for a belief level at or around the malicious end of the scale and at least one mode therebetween; and

performing an authentication process on the message depending on which mode is selected.

² Our decision relies upon Appellant's Appeal Brief ("App. Br.," filed Mar. 22, 2012); Reply Brief ("Reply Br.," filed July 30, 2012); Examiner's Answer ("Ans.," mailed May 31, 2012); Final Office Action ("Final Act.," mailed Oct. 26, 2011); and the original Specification ("Spec.," filed Aug. 21, 2008).

12. *A method for authenticating a message received by a vehicle, said method comprising:*

performing a validity determination of a sending vehicle of the message as to its validity;

selecting an authentication mode based on the validity determination from a plurality of authentication modes where the authentication modes have different strengths of authentication so as to adapt an authentication process of the message based on a determination as to the chance that the message or sender may be malicious or bona fide; and

performing the authentication process using the selected mode.

16. *A method for authenticating a message received by a vehicle, said method comprising:*

establishing a belief level of a sending vehicle of the message as to its validity;

providing a scale having a bona fide message at one end and a malicious message at an opposite end where the belief level of the message falls along the scale;

determining how much received message data is stored in a queue in a buffer for processing for authentication;

establishing a table that identifies a plurality of authentication modes for authenticating the message;

selecting a mode in the table for authenticating the message based on a combination of how much data is stored in the queue and where on the scale the belief level falls; and

performing an authentication process on the message depending on which mode is selected.

Prior Art

The Examiner relies upon the following prior art as evidence in rejecting the claims on appeal:

Yeager et al. ("Yeager")	U.S. 2003/0055894 A1	Mar. 20, 2003
Lane et al. ("Lane")	U.S. 2004/0111369 A1	June 10, 2004
Bosseler	U.S. 2007/0076733 A1	Apr. 5, 2007

Rejections on Appeal

R1. Claims 1, 3, 4, 6, 10, and 11 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Yeager. Final Act. 2; Ans. 3.

R2. Claims 2, 5, 8, 9, and 12–15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Yeager and Lane. Final Act. 6; Ans. 3.

R3. Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Yeager and Bosseler. Final Act. 9; Ans. 3.

R4. Claims 16–20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Yeager, Lane, and Bosseler. Final Act. 10; Ans. 3.

CLAIM GROUPING

Based on Appellant's arguments (App. Br. 9–25), we decide the appeal of Rejection R1 of claims 1, 4, 10, and 11 on the basis of representative independent claim 1; we decide the appeal of Rejection R2 of

claims 12–15 on the basis of representative independent claim 12; we decide Rejection R2 of claims 2, 5, 8, and 9 on the basis of representative dependent claim 2; and we decide the appeal of Rejection R4 of claims 16–20 on the basis of representative independent claim 16.

We address separately argued Rejection R1 of claims 3 and 6, and separately argued Rejection R3 of claim 7, *infra*.

ISSUES AND ANALYSIS

In reaching this decision, we consider all evidence presented and all arguments actually made by Appellant. We do not consider arguments which Appellant could have made but chose not to make in the Briefs so that we deem any such arguments as waived. 37 C.F.R. § 41.37(c)(1)(vii).

We agree with Appellant's arguments with respect to claims 3 and 6. However, we disagree with Appellant's arguments with respect to claims 1, 2, 4, 5, and 7–20, and we incorporate herein and adopt as our own: (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken and (2) the reasons and rebuttals set forth in the Examiner's Answer in response to Appellant's arguments with respect to these claims. We incorporate such findings, reasons, and rebuttals herein by reference unless otherwise noted. We highlight and address specific findings and arguments regarding claims 1–3, 12, and 16 for emphasis as follows.

1. § 102 Rejection R1 of Claims 1, 4, 10, and 11

Issue 1

Appellant argues (App. Br. 9–16; Reply Br. 1–2) the Examiner's rejection of claims 1, 4, 10, and 11 under 35 U.S.C. § 102(e) as being

anticipated by Yeager is in error. These contentions present us with the following issue:

Did the Examiner err in finding the cited prior art combination discloses a "method for authenticating messages" which includes, *inter alia*, the steps of "selecting an authentication mode based at least in part on the belief level . . . [and having] at least one mode . . . [between a blind accept mode and a discard mode on opposite ends of a belief level scale]," and "performing an authentication process on the message depending on which mode is selected," as recited in claim 1?

Analysis

Appellant contends Yeager does not disclose a method for authenticating messages based on a trust or belief value which includes selecting an authentication mode based upon the belief level. App. Br. 11–12. Appellant further contends Yeager does not disclose at least one mode between a blind accept mode for belief level at or around a *bona fide* end of a belief scale, and a discard mode for belief level at or around a malicious end of the belief scale, as required by claim 1. App. Br. 12–13. Appellant also contends Yeager does not disclose the step of "performing an authentication process on the message depending on which mode is selected," as recited in claim 1. App. Br. 13.

Appellant alleges the Examiner overstates Yeager's teachings because Figure 6 "simply defines different levels of trust, from distrust to complete trust, but does not designate specific authentication modes associated with each of the belief (trust) levels," as claimed. App. Br. 13–14.

Appellant summarizes their arguments as follows:

Appellant's claimed method is novel in first determining a belief level in a message, and then using that belief level to determine what message authentication process to use, including multiple belief levels and associated authentication modes, or lightweight or skipped authentication can save computing resources and real-time, resource constrained systems. . . . [W]hile Yeager discloses tremendous detail about establishing a belief (trust) level and a message or sender, Yeager does not [disclose] a method for authenticating messages based on the belief level as claimed

App. Br. 14.

The Examiner finds Yeager discloses a belief level scale having different levels of trust associated with different values along the scale. Ans. 4 (citing Yeager ¶ 96). We find Yeager's teachings includes both a *bona fide* end of the scale, and a malicious end of the same scale. *See* Yeager Fig. 6 (where "-1" value for "Distrust" corresponds to the claimed "malicious end," and the value "4" for "Complete trust" corresponds to the claimed "*bona fide*" end.

We also find this portion of Yeager referenced by the Examiner teaches a cooperation threshold based on trust from which risk of interaction and security is assessed. We also find this concept carries through the disclosure of Yeager. In particular, paragraph 104, "Security and the Trust Mechanism," and paragraph 105 disclose:

[0105] Security may address privacy, *authentication*, integrity, and/or non-repudiation. Various cryptographic techniques and protocols may be implemented, for example, to attempt to guarantee that a conversation is private, *to authenticate a user*, to insure the integrity of data, and to assure that a transaction cannot be repudiated by its originator.

Yeager ¶ 105 (emphasis added). Yeager further discloses:

[0110] In one embodiment, the trust mechanism may provide a trust spectrum, as illustrated in **FIG. 9A**. The trust mechanism may not require a true, distributed Public Key Infrastructure (PKI), but rather may provide for the creation of a trust spectrum that neither requires nor prohibits a presence of a PKI. At what point of trust in the spectrum peer group chooses to communicate may be up to the participants in that group. A peer may belong to two or more different peer groups, each implementing a different security model in different levels of the trust spectrum. In a trust spectrum, *unique peer identities may be established to enable authentication and the assignment of the peers' associated access policies within a peer group, e.g., authentication and authorization.*

Yeager ¶ 110 (emphasis added).

We have reviewed Appellant's arguments in the Reply Brief (Reply Br. 1 *et seq.*), but do not find these arguments to be persuasive of Examiner error.

Therefore, based upon the findings above, on this record, we are not persuaded of error in the Examiner's reliance on the disclosure of Yeager to disclose the contested limitations of claim 1, nor do we find error in the Examiner's resulting finding of anticipation. Accordingly, we sustain the Examiner's anticipation rejection of independent claim 1 and claims 4, 10, and 11, which fall therewith. *See Claim Grouping, supra.*

2. § 102 Rejection R1 of Claims 3 and 6

Issue 2

Appellant argues (App. Br. 15–16) the Examiner's rejection of claims 3 and 6 under 35 U.S.C. § 102(e) as being anticipated by Yeager is in error. These contentions present us with the following issue:

Did the Examiner err in finding Yeager anticipates claims 3 and 6 because claims 2 and 5, from which claims 3 and 6 respectively depend, are rejected under a different statutory basis, i.e., obviousness under § 103 in view of Yeager and Lane?

Analysis

Appellant contends the Examiner erred in rejecting claims 3 and 6 because, *inter alia*,

[C]laim 3 depends from claim 2, and claim 6 depends from claim 5, and neither claim 2 nor claim 5 is rejected as being anticipated by Yeager. For this additional reason, Appellant respectfully submits that claims 3 and 6 cannot be anticipated by Yeager.

App. Br. 16. We agree with Appellant's argument.

We note the Examiner completely failed to address Appellant's argument regarding the impropriety of the rejection in the Answer.

Accordingly, based upon the findings above, on this record, we are persuaded of error in the Examiner's reliance on Yeager to anticipate claims 3 and 6, and we therefore do not sustain Rejection R1 of claims 3 and 6.³

³ In the event of further prosecution, we leave it to the Examiner to consider whether claims 3 and 6 should instead be rejected under 35 U.S.C. § 103(a) as being obvious over Yeager and Lane. While the Board is authorized to reject claims under 37 C.F.R. § 41.50(b), no inference should be drawn when the Board elects not to do so. *See Manual of Patent Examining Procedure* (MPEP) § 1213.02.

3. § 103 Rejection R2 of Claims 2, 5, 8, 9, and 12–15

Issue 3

Appellant argues (App. Br. 17–20) the Examiner's rejection of claims 2, 5, 8, 9, and 12–15 under 35 U.S.C. § 103(a) as being obvious over the combination of Yeager and Lane is in error. These contentions present us with the following issue:

Did the Examiner err in finding the cited prior art combination teaches or suggests a "method for authenticating a message" which includes, *inter alia*, the steps of:

selecting an authentication mode based on the validity determination from a plurality of authentication modes where the authentication modes have different strengths of authentication so as to adapt an authentication process of the message based on a determination as to the chance that the message or sender may be malicious or bona fide; and performing the authentication process using the selected mode,

as recited in claim 12?

Analysis

Appellant generally contends Yeager does not teach or suggest all the claim limitations of claim 12 for the reasons "discussed above with respect to claim 1." App. Br. 18. Further, Appellant alleges adding Lane's teaching of a vehicle in the § 103 rejection does not remedy the purported deficiencies of Yeager. *Id.*

Thus, for the same reasons discussed above with respect to claim 1, *Issue 1*, Appellant has not provided sufficient evidence or argument to persuade us of any reversible error in the Examiner's reading of the

contested limitations on the cited prior art. Therefore, we sustain the Examiner's obviousness rejection of independent claim 12, and claims 8, 9, and 13–15, which fall therewith. *See* Claim Grouping, *supra*.⁴

Further, while Appellant raises what may be characterized as separate arguments for patentability of dependent claims 2 and 5 (App. Br. 19), depending on claim 1, and rejected on the same basis as claim 12, we find the Examiner has rebutted each of those arguments in the Answer by a preponderance of the evidence. Ans. 8–10. Therefore, we adopt the Examiner's findings and underlying reasoning, which we incorporate herein by reference.

Consequently, we find no reversible error in the Examiner's rejections of claims 2, 5, 8, 9, and 12–15 under § 103.

4. § 103 Rejection R3 of Claim 7

Issue 4

Appellant argues (App. Br. 20–22) the Examiner's rejection of claim 7 under 35 U.S.C. § 103(a) as being obvious over the combination of Yeager

⁴ With respect to dependent claims 8, 9, and 13–15, Appellant recites portions of the claim limitations and contends the references do not teach the limitations. App. Br. 18–19. We do not consider such statements to be arguments. 37 C.F.R. § 41.37(c)(1)(vii) ("A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim."). *In re Lovin*, 652 F.3d 1349, 1357 (Fed. Cir. 2011) ("[W]e hold that the Board reasonably interpreted Rule 41.37 to require more substantive arguments in an appeal brief than a mere recitation of the claim elements and a naked assertion that the corresponding elements were not found in the prior art."). Thus, we do not find Appellant's arguments to be persuasive.

and Bosseler is in error. These contentions present us with the following issue:

Did the Examiner err in combining Yeager with Bosseler to teach or suggest the limitations of dependent claim 7 because Bosseler is allegedly non-analogous art to the claimed invention and is therefore not properly combinable with Yeager under § 103?

Analysis

Appellant argues:

[N]either Yeager nor Bosseler teach using a combination of belief level and queue length to select an authentication mode. Appellant further submits that it would not have been obvious to combine Bosseler's teaching of determining how much unprocessed data is present in a buffer with Yeager's determination of a trust level, as Bosseler's disclosure is in a nonanalogous art area and has nothing to do with message authentication. . . . Appellant therefore respectfully submits that claim 7 is not obvious over Yeager in view of Bosseler.

App. Br. 21–22.

We note the test of whether a reference is from an analogous art is first, whether it is within the field of the inventor's endeavor, and second, if it is not, whether it is reasonably pertinent to the particular problem with which the inventor was involved. *See In re Wood*, 599 F.2d 1032, 1036 (CCPA 1979). A reference is reasonably pertinent if, even though it may be in a different field of endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering the inventor's problem. *See In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992).

We find Yeager is directed to representing trust in distributed peer-to-peer networks, and Bosseler is generally related to changing a mode of operation of a device based upon comparison of a predicted job queue length with a predetermined threshold value. Thus, on this basis, we find Bosseler to be sufficiently pertinent to Appellant's problem of mode selection solved by the claimed invention.

Further, we find Appellant's arguments concerning Bosseler being non-analogous art lack any evidentiary foundation. Attorney arguments and conclusory statements that are unsupported by factual evidence are entitled to little probative value. *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997); *see also In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984).⁵

Therefore, based upon the findings above, on this record, we are not persuaded of error in the Examiner's reliance on the combined teachings and suggestions of the cited prior art combination to teach or suggest the contested limitation of claim 7, nor do we find error in the Examiner's resulting legal conclusion of obviousness.

5. § 103 Rejection R4 of Claims 16–20

Issue 5

Appellant argues (App. Br. 22–25) the Examiner's rejection of claims 16–20 under 35 U.S.C. § 103(a) as being obvious over the combination of Yeager, Lane, and Bosseler is in error. These contentions present us with the following issue:

⁵ "Argument in the brief does not take the place of evidence in the record." *In re Schulze*, 346 F.2d 600, 602 (CCPA 1965) (citing *In re Cole*, 326 F.2d 769, 773 (CCPA 1964)).

Did the Examiner err in combining Yeager and Lane with Bosseler to teach or suggest the limitations of independent claim 16 because Bosseler is allegedly non-analogous art to the claimed invention and is therefore not properly combinable with Yeager and Lane under § 103?

Analysis

Similar to Appellant's argument with respect to claim 7, *Issue 4*, *supra*, Appellant contends, "it would not have been obvious to combine Bosseler's teaching of determining how much unprocessed data is present in a buffer with Yeager's determination of a trust level, as Bosseler's disclosure is in a non-analogous art area and has nothing to do with message authentication." App. Br. 23.

For the same reasons discussed with respect to claim 7, we disagree with Appellant's argument concerning Bosseler allegedly being non-analogous art.

We further note Appellant's challenge to the references individually is not convincing of error in the Examiner's position because all of the features of the secondary reference need not be bodily incorporated into the primary reference, but consideration should be given to what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. *See In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Furthermore, the artisan is not compelled to blindly follow the teaching of one prior art reference over the other without the exercise of independent judgment. *See Lear Siegler, Inc. v. Aeroquip Corp.*, 733 F.2d 881, 889 (Fed. Cir. 1984).

In addition, Appellant has provided no evidence that combining such teachings was "uniquely challenging or difficult for one of ordinary skill in the art," *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007), nor has Appellant presented evidence that this incorporation yielded more than expected results.

Accordingly, Appellant has not provided sufficient evidence or argument to persuade us of any reversible error in the Examiner's reading of the contested limitations on the cited prior art. Therefore, we sustain the Examiner's obviousness rejection of independent claim 16, and claims 17–20 which fall therewith. *See Claim Grouping, supra.*

REPLY BRIEF

To the extent Appellant advances new arguments in the Reply Brief (Reply Br. 1–3) not in response to a shift in the Examiner's position in the Answer, we note that "[a]ny bases for asserting error, whether factual or legal, that are not raised in the principal brief are waived." *Ex parte Borden*, 93 USPQ2d 1473, 1474 (BPAI 2010) (informative). *Cf. with Optivus Tech., Inc. v. Ion Beam Appl'ns. S.A.*, 469 F.3d 978, 989 (Fed. Cir. 2006) ("[A]n issue not raised by an appellant in its opening brief . . . is waived.").

CONCLUSIONS⁶

(1) The Examiner did not err with respect to anticipation Rejection R1 of claims 1, 4, 10, and 11 under 35 U.S.C. § 102(e) over Yeager, and we sustain the rejection.

(2) The Examiner erred with respect to anticipation Rejection R1 of claims 3 and 6 under 35 U.S.C. § 102(e) over Yeager, and we do not sustain the rejection.

(3) The Examiner did not err with respect to obviousness Rejections R2–R4 of claims 2, 5, 7–9, and 12–20 under 35 U.S.C. § 103(a) over the cited prior art combinations of record, and we sustain the rejections.

DECISION

We affirm the Examiner's decision rejecting claims 1, 2, 4, 5, and 7–20, and we reverse the Examiner's decision rejecting claims 3 and 6.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2011).

AFFIRMED-IN-PART

⁶ We observe all the steps of at least claim 1 could be performed as mental steps by a person who receives (hears and/or sees) a message "at a receiver device" (e.g., a person listening to a radio or viewing a television message). In the event of further prosecution of this application, we leave it to the Examiner to review all the claims for compliance under 35 U.S.C. § 101 in light of the recently issued preliminary examination instructions on patent eligible subject matter. *See* "Preliminary Examination Instructions in view of the Supreme Court Decision in *Alice Corporation Pty. Ltd. v. CLS Bank International, et al.*," Memorandum to the Examining Corps, June 25, 2014. Although the Board is authorized to reject claims under 37 C.F.R. §41.50(b), no inference should be drawn when the Board elects not to do so. *See Manual of Patent Examining Procedure* (MPEP) 1213.02.

Appeal 2012-011321
Application 12/195,737

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