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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte OLIVER LEI and ALLEN R. MURRAY

Appeal 2018-000462
Application 15/047,236
Technology Center 3600

Before JENNIFER D. BAHR, DANIEL S. SONG, and SEAN P. O'HANLON, *Administrative Patent Judges*.

O'HANLON, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's final decision rejecting claims 1–20.[1] We have jurisdiction over this appeal under 35 U.S.C. § 6(b). We REVERSE.

[1] Appellant is the Applicant, Ford Global Technologies, LLC, which, according to the Appeal Brief, is the real party-in-interest. Appeal Br. 1.

In explaining our Decision, we refer to the Specification filed February 18, 2016 ("Spec."), the Final Office Action dated April 18, 2017 ("Final Act."), the Appeal Brief filed June 30, 2017 ("Appeal Br."), the Examiner's Answer dated August 15, 2017 ("Ans."), and the Reply Brief filed October 16, 2017 ("Reply Br.").

SUMMARY OF THE INVENTION

Appellant's claimed invention relates to "a method and apparatus for enhanced telematics security through use of a secondary data channel." Spec. ¶ 1. Claims 1, 9, and 15 are independent. Claims 1 and 15, reproduced below from pages 1 and 3, respectively, of the Claims Appendix ("Claims App.") of the Appeal Brief, are illustrative of the claimed subject matter:

> 1. A system comprising:
> a processor configured to:
> wirelessly receive a vehicle system command from a remote source over a first communication channel;
> responsive to receiving the command, open a second communication channel with an apparent command-originating source;
> request, over the second communication channel, verification that the command originated from the apparent command-originating source; and
> execute the command responsive to command-origin verification.
>
> 15. A computer-implemented method comprising:
> receiving a command origin verification request, to verify a command wirelessly received by a vehicle, over a wireless communication channel at a remote command originating source;
> receiving command-identifying data, as part of the verification request, relating to the command;

determining if the command was sent from the remote command originating source, based on the command-identifying data; and

verifying the command origin as the remote command originating source, contingent upon the determining.

REFERENCES

The Examiner relies on the following prior art references in rejecting the claims on appeal:

Simon	US 5,937,065	Aug. 10, 1999
Ghabra	US 2005/0258936 A1	Nov. 24, 2005
Meyer	US 6,992,982 B1	Jan. 31, 2006
Matsubara	US 7,383,056 B2	June 3, 2008
Maher	US 2013/0212659 A1	Aug. 15, 2013
Zivkovic	US 2014/0340193 A1	Nov. 20, 2014
Lin	US 2016/0225260 A1	Aug. 4, 2016
Hermann	EP 1 024 626 A1	Aug. 2, 2000

REJECTIONS[2]

I. Claims 1–4 and 9–12 stand rejected under 35 U.S.C. § 103 as being unpatentable over Simon and Hermann.

II. Claims 5, 6, 13, and 14 stand rejected under 35 U.S.C. § 103 as being unpatentable over Simon, Hermann, and Maher.

III. Claim 7 stands rejected under 35 U.S.C. § 103 as being unpatentable over Simon, Hermann, and Ghabra.

IV. Claim 8 stands rejected under 35 U.S.C. § 103 as being unpatentable over Simon, Hermann, Ghabra, and Meyer.

[2] A rejection of claim 18 under 35 U.S.C. § 112(a) has been withdrawn. Final Act. 11; Ans. 3.

V. Claims 15 and 18 stand rejected under 35 U.S.C. § 103 as being unpatentable over Matsubara and Ghabra.

VI. Claims 16 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Matsubara, Ghabra, and Meyer.

VII. Claim 17 stands rejected under 35 U.S.C. § 103 as being unpatentable over Matsubara, Ghabra, and Lin.

VIII. Claim 19 stands rejected under 35 U.S.C. § 103 as being unpatentable over Matsubara, Ghabra, and Zivkovic.

ANALYSIS

Rejection I

The Examiner relies on Simon to disclose a system substantially as recited in claim 1, but relies on Hermann to teach a second communication channel. Final Act. 12–15. The Examiner reasons that it would have been obvious

> to use the remote control authorization/verification procedures disclose[d] in Simon and use the unidirectional wireless communication channel to establish initial contact between the transponder and motor vehicle as taught by Hermann and further to utilize the wireless broadcast medium as also taught by Hermann to transmit the challenge number and receive[] the answer from transponder as disclosed by Simon because establishing the initial contact between the device via a unidirectional wireless communication channel is intuitive to users and prevents others from listening in to the channel.

Id. at 15 (citing Hermann ¶¶ 24, 44).

Appellant argues that the Examiner's rejection does not identify a "request for verification that the command came from the source." Appeal Br. 7. According to Appellant, "the prior art assumes that if the source is

verified as being permitted to send a command, which included a source identifier, then the command must have come from the source." *Id.* For the reasons provided below, we are persuaded by Appellant's arguments.

The Examiner maps Simon's remote control to the recited remote source and the initial numeric code transmitted by the remote control to the recited command, finding that "activation of the [remote control] switch by the driver causes an initial numeric code to be obtained and transmitted from the remote control to the control circuit." Final Act. 13; *see also id.* at 5 ("[T]he initial code transmitted from the remote control . . . to the vehicle control circuit in the Simon reference reads on the word *command*."). The Examiner states "receipt of the initial code from the remote control by the vehicle control circuit wakes up the control circuit and causes the control circuit to perform the procedure of FIG. 3." *Id.* at 5–6 (citing Simon, 5:5–10, Fig. 3). The Examiner's rejection, therefore, indicates that the command (waking up the vehicle control circuit and performing additional functions) occurs without any verification that the command originated from the apparent source as required by claim 1. Thus, the Examiner has not set forth how each of the claim recitations are disclosed or taught by the cited references. *See In re Royka*, 490 F.2d 981, 985 (CCPA 1974) (explaining that the cited references in an obviousness rejection must teach or suggest all of the claim features).

We additionally note that, when addressing the request recitation, the Examiner relies on Simon's disclosure of the vehicle control circuit generating a challenge number that is sent to the remote control that, in response, generates and sends to the control circuit an answer number. Final Act. 13–14.

Simon discloses keyless systems for gaining entry to and starting motor vehicles. Simon, 1:5–6. When the user presses a button on a remote control, the remote control generates and sends an initial numerical code to the vehicle. *Id.* at 5:3–19. In response to receiving the initial numerical code, the vehicle "wakes up," generates a random challenge number, and sends the generated challenge number to the remote control. *Id.* at 5:20–33. The remote control inputs the challenge number and a predefined seed number into an algorithm to generate an answer number, which it sends to the vehicle. *Id.* at 5:34–55. As part of the transmission, the remote control also sends an identification number for the remote control and a numerical indication of the function to be performed in the vehicle. *Id.* at 5:56–6:7. The vehicle generates an expected answer using the same algorithm as the remote control, and compares the received and expected answers. *Id.* at 6:8–30. If the answers do not match, the vehicle does not operate any function. *Id.* at 6:30–35. If the answers match, the vehicle compares the received remote control identification number to a list of valid remote control numbers. *Id.* at 6:36–43. If the received number is not on the list, the vehicle does not operate any function. *Id.* at 6:43–45. If the received number is on the list, the indicated function is performed. *Id.* at 6:51–7:38.

Thus, as correctly noted by Appellant, the verification identified by the Examiner is not whether the command received by the vehicle was sent by the apparent origin of the command. Rather, the verification identified by the Examiner is whether the remote control is a previously-established valid remote control. *Id.* at 6:36–43. Claim 1, however, requires a processor configured to request "verification that the command originated from the apparent command-originating source." Claims App. 1. The Examiner has

not identified any disclosure in Simon of verifying that the initial numeric code (relied upon by the Examiner as the recited command) originated from the remote control; in other words, that the remote control actually sent the initial numeric code.

Furthermore, when addressing the execute recitation, the Examiner identifies a different command ("the function requested by the switch indication" (Final Act. 14))[3] than the Examiner relied upon in the addressing the wirelessly receive recitation ("an initial numeric code" (*id.* at 13)). This lack of internal consistency further evidences shortcomings in the Examiner's rejection.

Accordingly, for the foregoing reasons, we do not sustain the rejection of claim 1 as being unpatentable over Simon and Hermann. We do not sustain the rejection of claims 2–4, which depend from claim 1, for the same reasons. *See In re Fine*, 837 F.2d 1071, 1076 (Fed. Cir. 1988) ("Dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious.").

Independent claim 9 contains recitations similar to those discussed above with respect to claim 1. *See* Claims App. 2 ("request origin verification of a control command wirelessly received over a first channel, over a second channel established with an apparent origin responsive to receipt of the control command"). The Examiner relies on the same findings and reasoning to reject claim 9 as with claim 1. Final Act. 16–18. We do not sustain the rejection of claim 9, and of its dependent claims 10–12, for the same reasons as set forth for claim 1.

[3] We understand the Examiner to reference the numerical indication of the function to be performed in the vehicle. *See* Simon, 6:4–7.

Rejections II–IV

Claims 5–8 depend, directly or indirectly, from claim 1, and claims 13 and 14 depend directly from claim 9. Claims App. 1–3. The Examiner does not rely on Maher, Ghabra, or Meyer in any manner that would remedy the deficiencies noted above with respect to the rejection of claim 1. *See* Final Act. 19–24. Therefore, we do not sustain the rejections of claims 5–8, 13, and 14 for the same reasons as set forth for claim 1.

Rejection V

The Examiner relies on Matsubara to disclose a computer-implemented method substantially as recited in claim 15, including receiving a command origin request that contains command-identifying data. Final Act. 24–25. The Examiner also relies on Ghabra to teach receiving a command origin request that contains command-identifying data. *Id.* at 26. In rejecting claim 15, the Examiner interprets "command-identifying data" as "data that identifies the source of the command," and concludes that Matsubara discloses receiving a command origin verification request containing such data. *Id.* at 25–26 (citing Matsubara, 18:20–39, Fig. 3).

Appellant argues that the Examiner's rejection does not identify a "request for verification of the origin of the command." Appeal Br. 9. According to Appellant, Matsubara verifies that its remote source is authorized to send commands, but does not verify that a received command was actually sent by the remote source. *Id.* Appellant also argues that "command-identifying data" "has an obvious plain-meaning as data that identifies a command." *Id.* Appellant argues that Ghabra also fails to disclose command-identifying data. *Id.* at 10. For the reasons provided below, we are persuaded by Appellant's arguments.

The Examiner maps Matsubara's response signal to the recited command origin verification request and the ID code contained within the response signal as the recited command-identifying data. Final Act. 24–25; *see also* Ans. 24 ("when the response signal is received, the transmitte[r] compares the ID code that is received along with the response signal to the ID code originally transmitted with the instruction signal (*receiving a command origin verification request*)").

Matsubara discloses a system for remotely performing vehicle functions, such as door unlocking and engine starting. Matsubara, 2:25–30. A portable transmitter includes a memory having an ID code stored thereon and a plurality of switches for performing various vehicle functions. *Id.* at 17:32–43. When one of the switches is operated, the transmitter outputs an instruction signal including an indication of the selected vehicle function and the transmitter's ID code. *Id.* at 17:44–67, 18:6–12. A vehicle-mounted processing apparatus includes a memory having an ID code stored thereon. *Id.* at 16:35–51. When the processing apparatus receives an instruction signal to perform a function, it determines whether the included ID code is the same as the processing apparatus's ID code to determine if the instruction signal was transmitted by a paired transmitter. *Id.* at 19:37–47. If the ID codes are identical, the processing apparatus transmits a response signal including its ID code to the transmitter. *Id.* at 20:12–18. Upon receiving the response signal, the transmitter determines whether the included ID code is the same as the transmitter's ID code. *Id.* at 18:23–27. If the ID codes are the same, the transmitter sends an acknowledgement signal to the processing apparatus and awaits further user action; if the ID codes are not the same, the transmitter waits for additional responses signals

for a predetermined amount of time and, if no correct response signal is received, the transmitter awaits further action without sending an acknowledgement signal. *Id.* at 18:28–60. Upon receiving the acknowledgement signal, the processing apparatus determines whether the included ID code is the same as the processing apparatus's ID code. *Id.* at 20:23–30. If the ID codes are the same, the processing apparatus causes the indicated function to be performed and awaits further instruction codes. *Id.* at 20:31–39, 21:20–23. If the ID codes are not the same, the processing apparatus waits for additional acknowledgement signals for a predetermined amount of time and, if no correct acknowledgement signal is received, the processing apparatus awaits further action without performing the function indicated in the instruction signal. *Id.* at 20:54–21:6.

Thus, as correctly noted by Appellant, by comparing the ID codes, Matsubara merely determines whether the portable transmitter is paired with the vehicle processing apparatus. *See id.* at 19:44–47, 20:31–34. Therefore, the Examiner has not set forth how Matsubara's transmitter receives a command origin verification request as required by claim 15. Nor has the Examiner adequately explained how the ID code of Matsubara's processing apparatus corresponds to the recited command-identifying data.

During examination of a patent application, pending claims are given their broadest reasonable construction consistent with the specification. *In re Am. Acad. of Sci. Tech Ctr*., 367 F.3d 1359, 1364 (Fed. Cir. 2004). 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). We agree with Appellant's

interpretation that the ordinary and customary meaning of "command-identifying data" is data that identifies a command. *See* Appeal Br. 9. The Examiner interprets this language as data that identifies the *source* of the command rather than identifying the command itself. Final Act. 25–26 (citing Spec. ¶¶ 26–27). The Examiner fails to explain adequately why we should interpret this language as identifying the *source* of the command, nor do we glean any reasoning from the cited portions of the Specification. Appellant cites to paragraph 32 of the Specification in support of its interpretation. Appeal Br. 10. As correctly noted by Appellant, this paragraph explains that the command origin verification contains data identifying the command—"timestamps, command information, command content, etc."

The Examiner's alternative reliance on Ghabra to teach a command origin verification request including command-identifying data (*see* Final Act. 26) does not remedy the shortcomings discussed above. Ghabra discloses customizable passive entry systems for passenger vehicles. Ghabra ¶¶ 3, 11. A user triggers an event, such as lifting a door handle or activating an engine start switch. *Id.* ¶ 25. The vehicle is provided with two antennas, one located inside the vehicle and one located outside the vehicle. *Id.* ¶ 20. In response to the trigger, a first interrogation signal is sent from one of the antennas and a second interrogation signal is sent from the other of the antennas. *Id.* ¶ 25. The second interrogation signal includes a challenge-response message. *Id.* A fob, carried by the user, receives the interrogation signals and, if the vehicle and indicated function are recognized, generates a response message that includes a reply to the challenge-response message and indications of the received strengths of the

first and second interrogation signals. *Id.* ¶¶ 24–25. A passive entry electronic module of the vehicle receives the response message and determines whether the fob is authorized. *Id.* ¶ 31. If the fob is authorized and if the reported strengths of the interrogation signals indicate that the fob is in the expected position (that is, inside or outside the vehicle) for the event, the requested passive entry function is performed; otherwise, the function is not performed. *Id.*

Initially, we note that the interrogation signals, relied on by the Examiner to correspond to the recited command origin verification request (*see* Final Act. 26), are not requests to verify the origin of any received command because Ghabra discloses a *passive* entry system in which the fob (tacitly relied on by the Examiner as the command originating source) does *not* send a vehicle system command. Instead, a user causes a vehicle system command to be triggered by, for example, lifting a door handle or activating an engine start switch. Ghabra ¶ 25.

Furthermore, the Examiner does not adequately explain why (or how) a skilled artisan would "add the vehicle interrogation signal and fob response message" to Matsubara's system. *See* Final Act. 26. As explained above, Ghabra's interrogation signals are used to determine whether the fob is in the expected position inside or outside of the vehicle for the vehicle system function triggered by the user. The Examiner has not explained adequately why verifying the location of Matsubara's transmitter would be beneficial.

Accordingly, for the foregoing reasons, we do not sustain the rejection of claim 15 as being unpatentable over Matsubara and Ghabra. We do not sustain the rejection of claim 18, which depends from claim 15, for the same reasons. *See In re Fine*, 837 F.2d at 1076.

Rejections VI–VIII

Claims 16, 17, 19, and 20 depend directly from claim 15. Claims App. 3–4. The Examiner does not rely on Meyer, Lin, or Zivkovic in any manner that would remedy the deficiencies noted above with respect to the rejection of claim 15. *See* Final Act. 27–31. Therefore, we do not sustain the rejections of claims 16, 17, 19, and 20 for the same reasons as set forth for claim 15.

CONCLUSION

In summary,

Claims Rejected	Basis	Affirmed	Reversed
1–4 and 9–12	§ 103 Simon and Hermann		1–4 and 9–12
5, 6, 13, and 14	§ 103 Simon, Hermann, and Maher		5, 6, 13, and 14
7	§ 103 Simon, Hermann, and Ghabra		7
8	§ 103 Simon, Hermann, Ghabra, and Meyer		8
15 and 18	§ 103 Matsubara and Ghabra		15 and 18
16 and 20	§ 103 Matsubara, Ghabra, and Meyer		16 and 20
17	§ 103 Matsubara, Ghabra, and Lin		17
19	§ 103 Matsubara, Ghabra, and Zivkovic		19
	Overall Outcome		1–20

REVERSED