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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte FALK RAABE, JÜRGEN BAUMANN,
JÖRG ORTH, and HUBERT KANIA

Appeal 2018-008487
Application 14/041,410
Technology Center 2100

Before ELENI MANTIS MERCADER, NORMAN H. BEAMER,
and ADAM J. PYONIN, *Administrative Patent Judges*.

MANTIS MERCADER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants¹ appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1–3 and 5–21, which constitute all the pending claims in this application. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ Appellants identify ABB Schweiz AG as the real party in interest (App. Br. 2).

THE INVENTION

Appellants' claimed invention is directed to "a connecting device for use in an industrial installation" which "can be connected to an energy supply line and has at least one first industrial bus interface" (Spec. ¶ 2).

Independent claim 1, reproduced below, is representative of the subject matter on appeal:

1. A connecting device for use in an industrial installation, which device can be connected to an energy supply line, the connecting device comprising:

at least one first industrial bus interface configured to receive first industrial bus input data transmitted using a first industrial bus protocol;

a second industrial bus interface configured to receive second industrial bus input data using a second industrial bus protocol;

a modulator coupled to both the first industrial bus interface and the second industrial bus interface and configured to concurrently produce first energy bus output data by modulating the first industrial bus input data from the first industrial bus interface onto an industrial Ethernet protocol and configured to produce second energy bus output data by modulating the second industrial bus input data from the second industrial bus interface onto the industrial Ethernet protocol, the first energy bus output data and the second energy bus output data together resulting in an energy bus output signal; and

an energy communicator configured to modulate the energy bus output signal onto a current signal for transmission on the energy supply line using a carrier frequency method.

App. Br. 16 (Claims Appendix).

REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal is the following:

1. Keller US 6,847,316 B1 Jan. 25, 2005
2. Litwin, Jr. US 7,162,634 B2 Jan. 9, 2007
3. Juillot US 2009/0121845 A1 May 14, 2009
4. Helmut Beikirch and Matthias Voß, *CAN-Transceiver for Field Bus Powerline Communications*, IEEE Int’l Symposium On Power Line Commc’ns and Its Applications, 257–264 (2000) (hereinafter “Beikirch”).

REJECTIONS

The Examiner made the following rejections:

Claims 1, 15, 19, and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Beikirch and Juillot. Final Act. 6.

Claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Beikirch, Juillot, and Litwin, Jr. Final Act. 11.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Beikirch and Juillot. Final Act. 12.

Claim 21 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Beikirch, Juillot, and Keller. Final Act. 16.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Beikirch and Juillot. Final Act. 17.

Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Beikirch, Juillot, and Litwin, Jr. Final Act. 22.

Claims 7–14 and 16–18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Beikirch and Juillot. Final Act. 23.

ISSUE

The pivotal issue is whether the Examiner erred in finding the combination of Beikirch and Juillot teaches or suggests the limitation of

a modulator coupled to both the first industrial bus interface and the second industrial bus interface and configured to concurrently produce first energy bus output data by modulating the first industrial bus input data from the first industrial bus interface onto an industrial Ethernet protocol and configured to produce second energy bus output data by modulating the second industrial bus input data from the second industrial bus interface onto the industrial Ethernet protocol, the first energy bus output data and the second energy bus output data together resulting in an energy bus output signal, as recited in independent claim 1, and similarly recited in independent claims 3, 5, 7, 15, and 16.

ANALYSIS

Appellants argue that

Juillot merely describes that a protocol may be encapsulated within TCP/IP, and does *not* teach modulating an industrial bus protocol onto an *industrial Ethernet protocol* prior to modulating the data onto an energy supply line. As appreciated by those skilled in the art of networking, TCP is a transport layer protocol and IP is an Internet layer protocol, which are both independent of the link layer, where the industrial Ethernet protocol resides

(App. Br. 10). Appellants contend that “it is well known in the art of computer networking that transport control protocol (TCP) is a layer 4 protocol of the Open Systems Interconnection model” (Reply Br. 2), and “it is known to those skilled in the art that internet protocol (IP) is a layer 3

protocol [modell]” (Reply Br. 3), whereas “it is also known to those skilled in the art that industrial Ethernet is a layer 1 and layer 2 protocol” (Reply Br. 3).

We are not persuaded. The Examiner finds, and we agree, that

[c]laim 1 requires in part the limitation “an industrial Ethernet protocol”, as recited in claim 1 above. The claim and/or specification of the instant application does not specify or give examples of what an industrial Ethernet protocol is. Thus, any protocol that may be used with Ethernet may be an industrial Ethernet protocol. Therefore, under BRI, TCP/IP is an industrial Ethernet protocol

(Ans. 8). Appellants’ assertion that “industrial Ethernet is a layer 1 and layer 2 protocol” is unsupported attorney argument and is non-persuasive. *See, e.g., In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (attorney arguments or conclusory statements are insufficient to rebut a prima facie case). Further, Appellants’ assertion is not commensurate in scope with the claim, which only recites an “industrial Ethernet protocol.”

The cited portions of Juillot teach communications through a powerline using “the LonTalk protocol (registered trademark), or via high-speed powerline carrier, by using for example a protocol encapsulated in TCP/IP” (Juillot ¶ 3; *see* Final Act. 9), and also teach “implementing a first powerline communication protocol (the communication between nodes uses for example the LonTalk or TCP/IP protocol)” (Juillot ¶ 58; *see* Final Act. 9). Additionally, Juillot expressly “implement[s] the LonTalk and TCP/IP protocols.” *See* Juillot ¶ 87, and Fig. 3, module 31. The Examiner finds that Juillot teaches that each node is communicated over a powerline communication bus using protocol encapsulated in TCP/IP (Ethernet). *See* Final Act. 9 (citing Juillot ¶¶ 3, 36, 58, and 60).

We note that Appellants' own Specification describes "transmitting signals between a control center and at least one field device in an industrial installation." Spec. ¶ 2. Thus, the Examiner under the broadest and reasonable interpretation standard appropriately relied on Juillot for teaching Ethernet as discussed above in an industrial setting applications as taught by Beikirch, thereby appropriately characterizing it as "industrial Ethernet protocol." *See* Spec. ¶ 5; Juillot ¶ 5; Beikirch, page 257.

Thus, the Examiner has identified a TCP/IP protocol encapsulation used in powerline communications, which broadly and reasonably is encompassed by Appellants' claimed "industrial Ethernet protocol" used to create "an energy bus output signal."

Accordingly, we affirm the Examiner's rejection of independent claim 1, as well as independent claims 3, 5, 7, 15, and 16 commensurate in scope and not separately argued, as well as all dependent claims.

CONCLUSION

The Examiner did not err in finding the combination of Beikirch and Juillot teaches or suggests the limitation of

a modulator coupled to both the first industrial bus interface and the second industrial bus interface and configured to concurrently produce first energy bus output data by modulating the first industrial bus input data from the first industrial bus interface onto an industrial Ethernet protocol and configured to produce second energy bus output data by modulating the second industrial bus input data from the second industrial bus interface onto the industrial Ethernet protocol, the first energy bus output data and the second energy bus output data together resulting in an energy bus output signal,

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as recited in independent claim 1, and similarly recited in independent claims 3, 5, 7, 15, and 16.

DECISION

The Examiner's decision rejecting claims 1–3 and 5–21 under 35 U.S.C. § 103(a) is affirmed.

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). *See* 37 C.F.R. § 41.50(f).

AFFIRMED