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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte FRÉDÉRIC BERNARD, NICOLAS CORDIER, FLORIAN PERNISEK, and BRUNO CHARRAT

Appeal 2018-001151
Application 15/144,034[1]
Technology Center 2600

Before ERIC B. CHEN, ADAM J. PYONIN, and MICHAEL J. ENGLE, *Administrative Patent Judges*.

CHEN, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] Applicants are Inside Secure, which, according to the Appeal Brief, is the real party in interest. (App. Br. 1.)

This is an appeal under 35 U.S.C. § 134(a) from the final rejection of claims 2–20. Claim 1 has been cancelled. We have jurisdiction under 35 U.S.C. § 6(b). We affirm-in-part.

STATEMENT OF THE CASE

Appellants' invention relates to sending data by inductive coupling, which includes extracting an antenna signal from an antenna circuit, extracting a first periodic signal from the antenna signal, producing a second periodic signal by way of a synchronous oscillator, placing the oscillator in a free oscillation mode and applying to the antenna circuit the second periodic signal, modifying the impedance of the antenna circuit, restoring the amplitude of the antenna signal, and resynchronizing the oscillator on the first periodic signal. (Abstract.)

Claim 2 is exemplary, with disputed limitations in italics:

> 2. A method for sending a data frame by inductive coupling, the method comprising:
>
> receiving, by inductive coupling at an antenna circuit, an alternating external magnetic field, the antenna circuit being tuned based on a carrier frequency of the alternating external magnetic field;
>
> producing, using the antenna circuit, a first periodic signal that is based on the alternating external magnetic field;
>
> producing, by an oscillator circuit, a second periodic signal that is based on the first periodic signal;
>
> performing a first synchronization of the second periodic signal based on the first periodic signal by placing the oscillator circuit in a synchronous oscillation mode;
>
> placing the oscillator circuit in a free oscillation mode;

> sending a first portion of the data frame by applying the second periodic signal to the antenna circuit, the first portion of the data frame being on a scale of one data bit or less; and
>
> after the sending the first portion of the data frame:
>
> *performing a second synchronization of the second periodic signal to the first periodic signal by placing the oscillator circuit in the synchronous oscillation mode before applying the second periodic signal to the antenna circuit to send a second portion of the data frame*, the second portion of the data frame being on the scale of one data bit or less.

Claims 2, 5, 6, 9, and 12–19 stand rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims 1, 3, 4, 6, 8, and 11–17 of commonly owned Charrat (US 9,331,748 B2; May 3, 2016).

Claims 2, 6, 9, and 13–18 stand rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims 1, 5, 6, 10, and 12–16 of commonly owned Charrat (US 8,838,023 B2; Sept. 16, 2014).[2]

[2] Appellants do not present any substantive arguments with respect to the rejections of claims 2, 5, 6, 9, and 12–19 under the judicially created doctrine of obviousness-type double patenting. (App. Br. 7–8.) In particular, Appellants have "requested that the double patenting rejections be held in abeyance until such time as allowable subject matter is identified in the present application" and "will take appropriate action, such as filing of an appropriate terminal disclaimer, upon a determination of allowability of the claims on appeal." (*Id.*) Thus, any such arguments are deemed to be waived.

Claims 2–20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Pitt-Pladdy (US 2008/0018433 A1; Jan. 24, 2008) and Krishna (US 2006/0022800 A1; Feb. 2, 2006).

ANALYSIS

We are persuaded by Appellants' arguments (App. Br. 9–10) that the combination of Pitt-Pladdy and Krishna would not have rendered obvious independent claim 2, which includes the limitation "performing a second synchronization of the second periodic signal to the first periodic signal by placing the oscillator circuit in the synchronous oscillation mode before applying the second periodic signal to the antenna circuit to send a second portion of the data frame."

The Examiner found that phase detector 110 of Pitt-Pladdy, which detects the difference between the voltage controlled oscillator (VCO) generated RF signal and the received RF signal, and adjusts phase and frequency of the internally generated RF signal, corresponds to the limitation "performing a second synchronization of the second periodic signal to the first periodic signal by placing the oscillator circuit in the synchronous oscillation mode." (Final Act. 14–15.) The Examiner further found that:

> a person of ordinary skill in the art would have easily realized that by switching the switch 128 shown in Fig. 4 of Pitt-Pladdy from transmission to reception (during which resynchronization to external signal is performed) not upon the completion of the entire transmission, but instead between the transmission of each packet, the next more precise level of synchronization may be achieved which is disclosed by Krishna as packet scale.

(Ans. 23.) Accordingly, the Examiner found that the combination of Pitt-Pladdy and Krishna teaches the limitation "before applying the second

periodic signal to the antenna circuit to send a second portion of the data frame." We do not agree with the Examiner's findings.

Pitt-Pladdy relates to radio-frequency identification (RFID), including "both traditional RFID systems, in which an RFID tag is used for identification, [and] other systems such as near field communications (NFC) systems." (¶ 1.) In particular, Pitt-Pladdy explains that "[t]he apparatus of the present invention may be used . . . as a reader and tag emulation apparatus." (¶ 26.) Figure 4 of Pitt-Pladdy illustrates a circuit diagram of an apparatus in tag emulation mode. (¶ 33.) Pitt-Pladdy explains that "[i]n tag emulation mode, the apparatus [100] receives an RF signal from an external reader device 146" and "[w]here the default mode is not tag emulation or where the apparatus is in reader mode then the apparatus has means to switch from reader mode into tag emulation mode," for example, switch 128. (¶ 36.) Pitt-Pladdy further explains that "phase detector 110 detects the difference in frequency and phase between the VCO generated RF signal and the received RF signal" (¶ 37) and "[t]he phase lock loop process will continue until an instruction to modulate and transmit the internally generated RF signal is received from the microprocessor" which "may occur once phase locking between the external RF signal and VCO generated signal has been detected by microprocessor 132" (¶ 38).

Krishna relates to "scheduling tag interrogations in an RFID system including a coordinated RFID tag reader array." (¶ 3.) Krishna explains that "time synchronization of multiple readers falls into three levels of precision, i.e., transaction scale, packet scale, and bit scale," such that "bit-scale synchronization is available when the timing in a reader is resolved and

accurate to the time scale of a small fraction of a single modulation bit within a message packet." (¶ 153.)

Although the Examiner found that the combination of Pitt-Pladdy and Krishna teaches the limitation "before applying the second periodic signal to the antenna circuit to send a second portion of the data frame," the Examiner has provided insufficient evidence to support such a finding. In particular, while Pitt-Pladdy explains that apparatus 100 receives an RF signal from an external reader device 146, and phase detector 110 continuously synchronizes the RF signal, Pitt-Pladdy is silent with respect to synchronization occurring between two "portions" of the RF signal, as required by claim 1. Moreover, even if Pitt-Pladdy was modified by Krishna, the Examiner has not made a finding that such a modification would result in a reasonable expectation of success. For example, the Examiner has not explained how toggling switch 128 between reader mode into tag emulation mode before the transmission of a bit scale RF signal would produce an operable device.

Accordingly, we are persuaded by Appellants' arguments that "synchronization of the data modulation signal is only performed between complete transmissions, not interleaved with a data transmission, such as in the method recited in claim 2" (App. Br. 9 (emphasis omitted)) and

> Pitt-Pladdy, as was noted above, discloses approaches where a periodic signal used for data transmission (i.e., an internal signal) is synchronized with an external signal (e.g., an external field) between complete transmissions. For instance, Pitt-Pladdy describes a device with two operating modes, a "reader" mode and a "card emulation" mode, where these modes are selectable by a switch 128

(*id.* at 10 (emphases omitted).)

Thus, we do not sustain the rejection of independent claim 2 under 35 U.S.C. § 103(a). Claims 3–8 depend from claim 2. We do not sustain the rejection of claims 3–8 under 35 U.S.C. § 103(a) for the same reasons discussed with respect to claim 2.

Independent claim 9 recites limitations similar to those discussed with respect to claim 2. We do not sustain the rejection of claim 9, as well as dependent claims 10–20, for the same reasons discussed with respect to claim 2.

DECISION

The Examiner's decision rejecting claims 2, 5, 6, 9, and 12–19 under the judicially created doctrine of obviousness-type double patenting is affirmed.

The Examiner's decision rejecting claims 2–20 under 35 U.S.C. § 103(a) is reversed.

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).

AFFIRMED-IN-PART