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EXAMINER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MIHAI TUDOSIE, PETER RAGGAM, CALIN BIRA, and
ALEXANDR CARAGHEORGHIU

Appeal 2018-006389
Application 13/862,770¹
Technology Center 2600

Before JOSEPH L. DIXON, JAMES W. DEJMEK, and
STEPHEN E. BELISLE, *Administrative Patent Judges*.

DEJMEK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a Final Rejection of claims 1–70. We have jurisdiction over the pending claims under 35 U.S.C. § 6(b).

We reverse.

¹ Appellants identify Infineon Technologies AG as the real party in interest. App. Br. 2.

STATEMENT OF THE CASE

Introduction

Appellants' disclosed and claimed invention generally relates to data transmission via an electrical power supply line using current modulation. Spec. ¶¶ 2, 18, Abstract. In a disclosed embodiment, a first element supplies electrical power (i.e., Vcc) to a second element and the second element modulates its current consumption to, effectively, transmit data from the second element to the first element via the power supply line, Vcc. Spec. ¶¶ 17–19.

Claim 1 is illustrative of the subject matter on appeal and is reproduced below with the disputed limitation emphasized in *italics*:

1. A method for data transmission, the method comprising:
conveying electrical power from a first element to a second element via an electrical power supply line that is physically connected between the first element and the second element;
transmitting data from the second element to the first element by modulating a current conveyed via the electrical power supply line.

The Examiner's Rejections

1. Claims 1–14, 16–29, 34–38, 41, 42, 44–46, 48–56, 59–66, and 68–70 stand rejected under 35 U.S.C. § 103 as being unpatentable over Degauque et al. (US 2012/0108169 A1; May 3, 2012) (“Degauque”) and Miles (US 2012/0100804 A1; Apr. 26, 2012). Final Act. 2–9.
2. Claims 15, 30–33, 39, 40, 43, 47, 57, 58, and 67 stand rejected under 35 U.S.C. § 103 as being unpatentable over Degauque, Miles, and Finkenzeller (US 8,797,163 B2; Aug. 5, 2014). Final Act. 9–12.

ANALYSIS²

Appellants argue that neither Degauque nor Miles teaches or suggests using a single electrical supply line to: (i) provide electrical power in one direction, and (ii) transmit data in the opposite direction. App. Br. 10–20. In particular, Appellants assert Degauque describes using a power supply line separate from the connection (SWP, single wire protocol) used for data transmission between the cited first and second elements. App. Br. 10–11 (citing Degauque ¶¶ 34, 55, Fig. 14). Similarly, Appellants assert Miles teaches an element (e.g., NFC communicator chip) receiving its power from a power provider (e.g., battery) and performing data transmission over a wireless connection. App. Br. 11–13 (citing Miles ¶¶ 3, 28, 31, Fig. 1).

In response, the Examiner finds the single wire point-to-point connection described in Degauque conveying/transmitting a power supply signal from a first element to a second element. Ans. 17 (citing Degauque ¶¶ 6–8, 30–32, 34–36, Figs. 1–3). Further, the Examiner finds Miles teaches “transmitting or conveying electrical power via an electrical power supply line and modulating a current conveyed via the electrical power supply line.” Ans. 18 (citing Miles ¶¶ 55–60, 70–71, 87, Fig. 4).

Degauque is generally directed to providing “an information exchange between a contactless element, such as NFC [(Near Field Communication)] controller, and several (at least two) auxiliary elements.” Degauque ¶ 9. In a disclosed embodiment, Degauque describes a plurality of auxiliary

² Throughout this Decision, we have considered the Appeal Brief, filed December 11, 2017 (“App. Br.”); the Reply Brief, filed June 4, 2018 (“Reply Br.”); the Examiner’s Answer, mailed April 4, 2018 (“Ans.”); and the Final Office Action, mailed May 4, 2017 (“Final Act.”), from which this Appeal is taken.

elements each comprising a slave SWP interface to a master element (i.e., NFC controller) wherein only one slave SWP is activated at a time.

Degauque ¶ 10. Figures 1 through 3 of Degauque, as relied on by the Examiner, illustrate, inter alia, the interface (i.e., SWP Connection) between the master device and the auxiliary device(s). See Degauque, Figs. 1–3.

Figure 3 of Degauque is illustrative and is reproduced below:

FIG.3

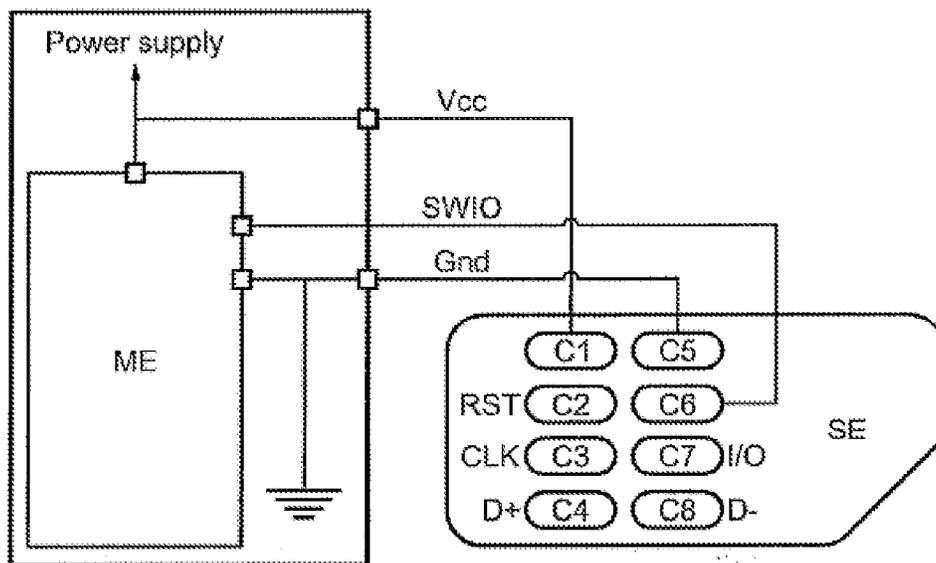


Figure 3 of Degauque illustrates the connections between a main element (ME) and an auxiliary (secure) element (SE). Degauque ¶¶ 25, 36. As shown, data transmission between the master element and secure element occurs over the SWIO interface, whereas electrical power (Vcc) is

separately supplied from the master element to the secure element.

Degauque ¶¶ 6, 36, *see also* Degauque ¶ 55, Fig. 14.

Miles generally relates to filtering a single wire protocol (SWP) signal in a mobile device to remove noise. Miles ¶ 1, Abstract. Miles describes that electromagnetic interference within a mobile device may degrade the communication of a single wire used as part of SWP. Miles ¶ 53. Figure 4 of Miles, relied on by the Examiner, is illustrative and is reproduced below:

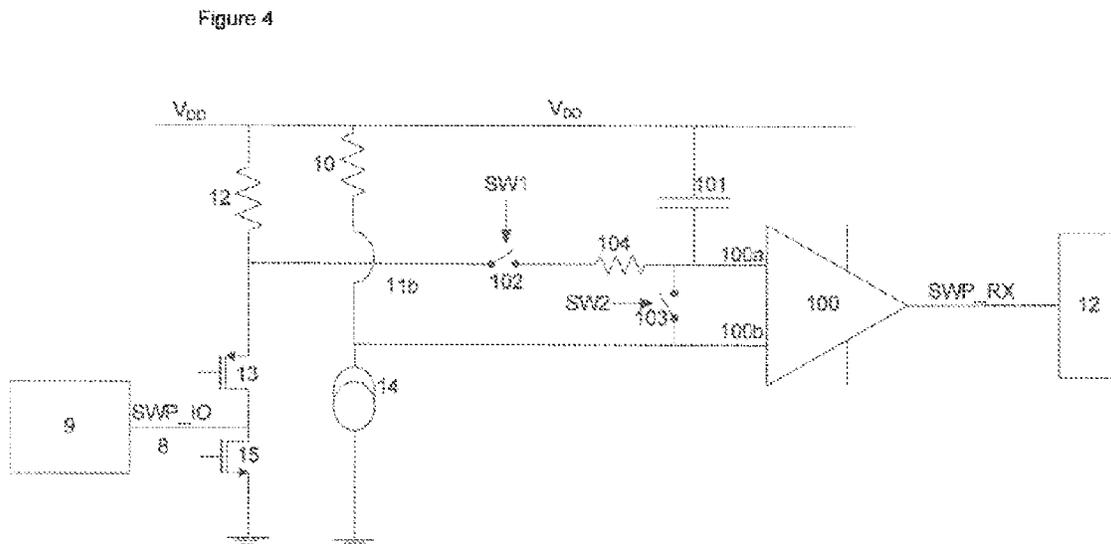


Figure 4 of Miles illustrates a circuit diagram to provide noise suppression on the SWP line. Miles ¶¶ 3, 20, 55–60. As shown, data input to the circuit is represented as SWP_IO (8) and data output from the circuit is represented as SWP_RX, the output of comparator (100). Miles ¶¶ 55–60. Miles discloses VDD as the supply or reference voltage (i.e., the electrical power supply input to the circuit). Miles ¶ 57. Although VDD may be used to set a reference input to comparator (100) (*see, e.g.*, Miles ¶ 58), data is not transmitted from Universal Integrated Circuit Card (9) to Near Field Communicator (12) by modulating a current conveyed by power supply line VDD.

Further, the Examiner has not set forth sufficient evidence or technical reasoning that one of ordinary skill in the art would have combined the teachings and suggestions of Degauque and Miles to result in the claimed invention of modulating a current conveyed by an electrical power supply line for data transmission.

Because we find it dispositive that Degauque and Miles, alone or in combination, fail to teach or reasonably suggest transmitting data between a first and second element by modulating the current of the electrical power supply line, as required by independent claims 1, 16, 37, 47, 58, and 66, we need not address other issues raised by Appellants' arguments.

For the reasons discussed *supra*, we are persuaded of Examiner error. Accordingly, we do not sustain the Examiner's rejection of independent claim 1. For similar reasons, we do not sustain the Examiner's rejection of independent claims 16, 37, 47, 58, and 66, which recite similar limitations. Additionally, we do not sustain the Examiner's rejections of claims 2–15, 17–36, 38–46, 48–57, 59–65, and 67–70, which depend directly or indirectly therefrom.

DECISION

We reverse the Examiner's decision rejecting claims 1–70.

REVERSED