UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/467,069	08/25/2014	Kurt Rudahl	GR/1	7494

122474 7590 09/21/2020

Danielson Legal LLC
ATTN: Patent Administrator
503 7th St. N, Ste 107
Fargo, ND 58102

EXAMINER
DICKINSON, DUSTIN R

ART UNIT	PAPER NUMBER
2867	

NOTIFICATION DATE	DELIVERY MODE
09/21/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@dockettrak.com
patentadmin@danielsonlegal.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KURT RUDAHL and SALLY GOLDIN

Appeal 2019-006272
Application 14/467,069
Technology Center 2800

Before CATHERINE Q. TIMM, BEVERLY A. FRANKLIN, and N. WHITNEY WILSON, *Administrative Patent Judges.*

WILSON, *Administrative Patent Judge.*

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's November 20, 2018 decision to finally reject claims 1, 3, 5, 8, 9, 13–16, and 18–24 ("Final Act"). We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

[1] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Heurika Geographics Ltd. (Appeal Br. 4).

CLAIMED SUBJECT MATTER

Appellant's disclosure is directed to a method of detecting faults beneath a construction supported by earth, which can serve as part of an early warning system for road, runway, and railway failures (Abstract). The method comprises detecting the conditions of fabric built into the construction supported by earth, where the detected condition is associated with the location of the fabric that was built into the construction. The detected condition of the fabric is reported (*id*.). The fabric contains an array of electronic circuits such that stretching or tearing said fabric will damage electrical characteristics of the fabric, in particular the ability of embedded RFID tags to respond to a radio frequency signal (*id*.; Spec. ¶76). Details of the claimed invention are set forth in representative claim 1, which is reproduced below from the Claims Appendix:

> 1. A method of detecting faults beneath a construction supported by earth, the method comprising:
>
> detecting, via a sensor assembly, one of a plurality of electrical conditions of a fabric built into the construction supported by earth, the fabric including a plurality of radio frequency identification (RFID) tags, each RFID tag having a head comprising electronics and a tail comprising an antenna configured to break in the event of a fault below the surface of the construction supported by earth, wherein the plurality of electrical conditions of the fabric includes a first electrical condition in which at least one of the antennas is damaged indicating damage to the fabric corresponding to a fault below the surface of the construction supported by earth, wherein said damage to the at least one antenna prevents the at least one RFID tag associated with the at least one damaged antenna from responding to a radio-frequency signal from the sensor assembly and a second electrical condition in which at least one of the plurality of antennas respond to the radio-frequency signal from the sensor assembly,

associating the detected electrical condition with a location of the fabric built into the construction, and

reporting the detected electrical condition of the fabric at the associated location.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Woodard et al.	US 2006/0070450 A1	April 6, 2006
Dorfner et al.	US 2007/0138304 A1	June 21, 2007
Girvin et al.	US 2006/0202829 A1	September 14, 2006
Nagarajan et al.	US 2012/0273263 A1	November 1, 2012
Cacace	US 2009/0020212 A1	January 22, 2009

REJECTIONS

1. Claims 1, 3, 5, 8, 13–16, and 19–24 are rejected under 35 U.S.C. § 103 as unpatentable over Woodard in view of Dorfner and Girvin.

2. Claim 9 is rejected under 35 U.S.C. § 103 as unpatentable over Nagarajan in view of Girvin.

3. Claim 18 is rejected under 35 U.S.C. §103 as unpatentable over Woodard in view of Dorfner and Girvin and further in view of Cacace.

Claim 18 was rejected under 35 U.S.C. § 112(a), but that rejection was withdrawn by the Examiner (Ans. 3) and is not before us on appeal.

DISCUSSION

Rejections 1 and 3. The Examiner's findings are set forth at pages 4–6 and 10 of the Final Action. The Examiner finds that Woodard discloses each of the limitations of claim 1, except that Woodard "does not explicitly

teach wherein the faults are detected beneath a construction supported by earth and the fabric is built into the construction supported by earth" and also does not disclose RFID tags with a head comprising electronics and a tail comprising an antenna configured to break in the event of a fault (Final Act. 5–6).

In particular, the Examiner finds that Woodard discloses that damage to an antenna on one of its tags prevents that tag "from responding to a radio-frequency signal" (Final Act. 5, citing Woodard, ¶ 26).

Appellant argues that Woodard does not disclose a system in which damage to an RFID tag prevents the tag from responding to a radio-frequency signal (Appeal Br. 12–13). According to Appellant, Woodard teaches that strain in its system is reflected in a change in the resonance frequency of the circuitry, as described below:

> The circuit 500 has a unique resonant frequency indicative of no damage/tampering. The resonant frequency is measured using a magnetic field response recorder 20 once the circuit 500 and substrate 400 are affixed on or in a package. ***Should tampering occur, the substrate 400 will be broken, thus breaking the circuit 500 resulting in one or more new resonant frequencies. The new resonant frequencies are indicative of package tampering***.

(Woodard, ¶ 26, emphasis added.)

In response, the Examiner finds that Appellant's Specification explicitly states that "damage to the fabric also breaks one or more of the wires or wire segments thereby changing the resonant frequency of the damaged region of said fabric which includes the broken wire or segment" (Ans. 4, citing Spec. ¶ 68). However, as explained by Appellant (Reply Br. 4–5), the portion of the Specification relied on by the Examiner relates to a

different embodiment of Appellant's disclosure, one which is not the claimed invention on appeal. That Woodard might disclose teachings pertinent to other, non-claimed aspects of Appellant's disclosure does not mean that Woodard discloses the claimed feature outlined above.

Thus, the Examiner's finding that Woodard discloses a system in which a damaged RFID tag does not respond to a radio-frequency signal is not supported by a preponderance of the evidence of record. The Examiner has the initial burden of establishing a prima facie case of obviousness based on an inherent or explicit disclosure of the claimed subject matter under 35 U.S.C. § 103. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992) ("[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability."). To establish a prima facie case of obviousness, the Examiner must show that each and every limitation of the claim is described or suggested by the prior art or would have been obvious based on the knowledge of those of ordinary skill in the art. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). Because the Examiner has not shown that the limitation regarding damage to an RFID tag preventing the tag from responding to a radio-frequency signal would have been obvious in view of the cited art, we reverse both Rejections 1 and 3, as they both rely on that erroneous finding.

Rejection 2. The Examiner rejects claim 9 as unpatentable over a different primary reference, namely Nagarajan, in view of Girvin. The rejection relies, in part, on the Examiner's finding that Nagarajan discloses that "damage to at least one of the antennas prevents said RFID tag associated with the damaged antenna from responding to a radio-frequency signal (Fig 6 where the cracked sensor prevents the response of the normal

sensor)" (Final Act. 10). However, as argued by Appellant, Nagarajan's FIG. 6 shows that its damaged RFID tag has a different response to the radio-frequency signal, not no response to said signal. Nagarajan's Figure 6 is reproduced below:

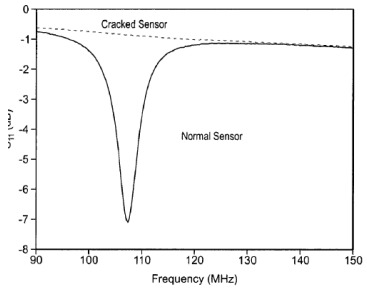

FIG. 6

Nagarajan's FIG. 6 shows a resonance frequency response of a normal working sensor and a cracked sensor interrogated with a network analyzer.

The Examiner does not fundamentally dispute Appellant's characterization of Nagarajan's disclosure, but states that:

> "Nagarajan teaches when the sensor is cracked the detected frequency response changes. The same effect may be described as providing a different frequency response or it may be described as failing to provide a response indicative of an unbroken sensor. ***Examiner believes this is sufficient to teach the claimed invention as there is a failure to respond at the original frequency***."

(Ans. 9, emphasis added). However, claim 9 does not recite "failure to respond at the original frequency," but instead recites that damage to the RFID tags prevents a response. Thus, the Examiner's finding that Nagarajan renders this limitation obvious is not supported by a preponderance of the evidence of record, necessitating reversal of the rejection.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 3, 5, 8, 13–16, 19–24	103	Woodard, Dorfner, Girvin		1, 3, 5, 8, 13–16, 19–24
9	103	Nagarajan, Girvin		9
18	103	Woodard, Dorfner, Girvin, Cacace		18
Overall Outcome				1, 3, 5, 8, 9, 13–16, 18–24

REVERSED