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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte THOMAS DANAHER HARVEY

Appeal 2019-006946
Application 15/997,815
Technology Center 3600

Before CHARLES N. GREENHUT, SUSAN L. C. MITCHELL, and
LISA M. GUIJT, *Administrative Patent Judges*.

GUIJT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE¹

Appellant² seeks our review under 35 U.S.C. § 134(a) of the rejection of claims 1–15, 18, 19, and 21–23. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

¹ The Specification states that the present application is a continuation-in-part of US Application No. 14/469,825 (Spec. ¶ 1), and notably, the Board rendered a decision in this related application: Appeal No. 2018-001975.

² We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the inventor, Thomas Danaher Harvey, as the real party in interest. Appeal Br. 4.

THE INVENTION

Appellant’s invention relates to “[the] location and interception of objects in unknown locations.” Spec. ¶ 1. Claims 1, 8, and 15 are the independent claims on appeal. Claim 1, reproduced below with disputed limitations italicized for emphasis, is illustrative of the subject matter on appeal.

1. A method of tracking a lost object comprising:
 - placing a first device with an object so that the first device will remain near the object when the object becomes lost;
 - transmitting an interrogation signal to the first device;
 - transmitting a ping signal from the first device to a search second device *wherein a parameter of the ping signal is modified as a function of at least one of the parameters of the interrogation signal to substantially increase the distance between the search second device and first device across which the search second device can detect the ping signal from the distance between the search second device and the first device across which the search second device can detect a ping signal using the parameter without the modification;* and, after receiving the ping signal and after the object has become lost, at least one of approaching the object, destroying the object and capturing the object.

THE REJECTIONS³

The Examiner relies upon the following as evidence in support of the rejections:

NAME	REFERENCE	DATE
Green	Recovering Data and Voice Recorders Following At-Sea Crashes, Dale Green, IEEE 978-1-4244-5222-41	2010

³ The Examiner’s rejections of 1–15, 18, 19, and 21–23 under 35 U.S.C. §§ 112(a) and 112(b) have been withdrawn. Ans. 3; Final Act. 2–5.

The following rejections are before us for review:

- I. Claims 1–15, 18, 19, and 21–23 stand rejected under the ground of non-statutory obviousness-type double patenting.
- II. Claims 1–15, 18, 19, and 21–23 stand rejected under 35 U.S.C. § 102(a)(2) as anticipated by Green.
- III. Claims 1–15, 18, 19, and 21–23 stand rejected under 35 U.S.C. § 103 as obvious over Green.

OPINION

Rejection I

The Examiner rejects claims 1–15, 18, 19, and 21–23 under the ground of non-statutory obviousness-type double patenting over claims 1–20 of US Patent 9,995,824; however, the Examiner acknowledges that a timely filed disclaimer in compliance with 37 C.F.R. §§ 1.321(c) or (d) may be used to overcome the rejection. Final Act. 5–6 (citations omitted); *see also* Ans. 3–4. Appellant argues that the terminal disclaimer entered on March 27, 2019 overcomes the Examiner’s non-statutory obviousness-type double patenting rejection. *See* Approval of Terminal Disclaimer entered March 27, 2019 (disclaiming any statutory term beyond the expiration of US Patent 9,995,824). The Examiner does not address the entry of the terminal disclaimer, and therefore, we are not apprised of any reason why the terminal disclaimer fails to overcome the Examiner’s rejection. *See* Ans. 3–4 (restating the non-statutory obviousness-type double patenting rejection).

Accordingly, we do not sustain the Examiner's rejection of claims 1–15, 18, 19, and 21–23 under the ground of non-statutory obviousness-type double patenting.

Rejection II

Regarding independent claim 1, the Examiner finds, *inter alia*, that Green discloses *modifying* a parameter of a ping signal, and specifically, *reducing* the ping signal's frequency, as a function of at least one parameter of an interrogation signal to substantially increase the distance across which the ping signal can be detected, as claimed. Ans. 5 (citing Green, Abstract, p. 1, col. 1, par. 2, section III–B); *see also* Final Act. 7.⁴ In particular, the Examiner relies on Green's Abstract for disclosing that “reducing the frequency to perhaps 12 kHz will substantially increase range in seawater,” and the Examiner finds that the broad claim limitation requiring modification of the ping signal reads on Green's suggested reduction in frequency. Ans. 8–9.

Appellant argues, *inter alia*, that although Green discloses that “the frequency parameter of a ping affects the range [of the ping signal],” Green “does not propose varying that parameter but only suggests the choice of a low frequency,” because, as implied in Green, “the lowest frequency possible for the size and weight of the ping generation transducer in a device is best.” Appeal Br. 17 (emphasis added); *id.* (“Green teaches that a lower frequency ping would be more detectable but more expensive to

⁴ The Examiner notes in the Examiner's Answer that “[i]n light of the amendments to Claims 1, 8 and 15, the examiner's rejections under 35 USC 102/103 have been modified to address the amended claim language.” Ans. 5. Appellant chose not to file a Reply Brief to address these modifications to the rejections.

implement,” but not “variation of the frequency”) (citing Green, Section IIIB). Appellant also argues that “Green teaches that a triggered response from a pinger would enable estimation of the distance between the search device and pinger (target device), but assumes that the ping can be received and does not address use of triggering to help with detecting the pings.” *Id.* (citing Green, Section IIIB).

Claim 1 requires, in relevant part, that *a parameter* of the ping signal is modified as a function of *at least one of the parameters* of the interrogation signal *to substantially increase the distance* at which the ping signal can be detected at a device for detecting the ping signal⁵ relative to an unmodified ping signal. The Specification provides express definitions for the parameters of the interrogation and ping signals:

Parameters of the interrogations signal, throughout this specification and in the claims, *are measurements made at the target device* of one or more of (a) arrival time relative to a known or estimated transmission time or relative arrival time of different components of the interrogation signal, (b) signal strength, (c) signal direction or (d) *other characteristics of the interrogation signal to be used to determine one or more parameters of the ping signal*. The fact of receipt of an interrogation signal in itself is specifically excluded in this definition from being a parameter of the interrogation signal.

Parameters of a ping signal, throughout this specification and *in the claims*, *refers to* time of transmission; *frequency*; pulse timing, length, and shape; *embedded data*; embedded identification; direction of emission; amplitude; and other characteristics of the signal that may affect the probability of detection, range of detection, or the ease of detection of the ping signal.

⁵ See, e.g., Spec. ¶ 43 (defining a search device, in the Specification and claims, as “a device to detect a ping signal”).

Spec. ¶¶ 39, 40 (emphasis added).

As relied on by the Examiner *supra*, Green discloses that “reducing the frequency [of the ping signal] to perhaps 12 kHz will substantially increase range in seawater.” Green, Abstract; *see also id.* at p. 3, col. 1, Section III B (“[w]ere we to simply reduce the frequency to 10 kHz, . . . [t]his change alone would greatly increase the detection range”). However, this passage from Green does not disclose modifying (or reducing) the frequency of the ping signal *as a function of a parameter of the interrogation signal*, as required by claim 1; rather, this passage from Green teaches modifying the frequency of the ping signal by reducing the frequency of the ping signal as a function of the type of environment through which the ping signal must travel (i.e., sea water).

Green also discloses, for example, that “[o]n the (reasonable) assumption that the now transmit/receive complex at the crash site has a well-defined time delay during which an interrogation is received and processed, and the reply is formulated and transmitted, we can estimate range.” Green, p. 3, col. 1, Section III A. Green explains that “[t]he obvious use of this acomms capability is to transfer information between or among modems, . . . [f]or example, should the blackbox system be equipped with a depth sensor (a low cost and inexpensive item not currently placed on the box), the search system can query the modem to extract the depth reading” or “‘snippets’ of the recorded data can be retrieved acoustically.” *Id.* at p. 3, col. 2, Section IV. Thus, Green discloses formulating (which implies modifying) a parameter (i.e., emdedded data, such as a depth reading or snippets of stored data) of the ping signal as a function of processing (which implies more than simply the receipt of) a parameter (i.e., other

characteristics of the interrogation signal to be used to determine a parameter of the ping signal, for example, embedded data such as a depth query or query for snippets of information) of an interrogation signal. However, Green fails to disclose that these parameters, which are processed and formulated, are used *to substantially increase the distance*⁶ at which the ping signal can be detected by a search device relative to an unformulated or unmodified ping signal, as claimed—nor does the Examiner find or reason, pursuant to 35 U.S.C. § 103, that it would have been obvious to do so.

Thus, a preponderance of the evidence fails to support the Examiner’s finding that Green discloses modifying a parameter of the ping signal (i.e., reducing the frequency of the ping signal) as a function of a parameter of the interrogation signal to substantially increase the distance at which the ping signal can be detected by a search device relative to an unmodified ping signal, as claimed.

Accordingly, we do not sustain the Examiner’s rejection of independent claim 1, and claims 2–7 and 21 depending therefrom. The Examiner relies on the same deficient findings from Green with respect to independent claims 8 and 15, which also require a parameter of the ping signal to be modified as a function of a parameter of the interrogation signal to increase the distance at which the ping signal may be detected by a search

⁶ See Appeal No. 2018-001975 of related US Application 14/469,825, Decision, pp. 7–8 (finding that the Specification discloses the following modifications to the ping signal for increasing the distance at which the ping signal can be detected by a search device as compared to the same ping signal being unmodified: (i) using signal processing technology to reduce noise (citing, *e.g.*, Spec. ¶ 52); (ii) increasing the power level of the ping signal (citing, *e.g.*, Spec. ¶¶ 3, 39, 40, Fig. 2); and (iii) increasing the intensity of the ping signal (citing, *e.g.*, Spec. ¶ 58).

device relative to an unmodified ping signal. Final Act. 7–8, Ans. 6–7.

Thus, for the same reasons stated *supra*, we also do not sustain the Examiner’s rejection of claims 8 and 15, and claims 9–14, 18, 19, 22, and 23 depending therefrom.

Rejection III

The Examiner does not make any additional findings with respect to how the subject matter of claims 1–15, 18, 19, and 21–23 would have been obvious in view of Green, pursuant to 35 U.S.C. § 103, apart from the findings in support of anticipation as presented in Rejection I, nor does the Examiner propose any modification (and therefore, reasoning in support of a modification) to Green’s recovery system to demonstrate the subject matter of claims 1–15, 18, 19, and 21–23 would have been obvious. Final Act. 7–9; Ans. 5–10; *see also* Ans. 5 (stating that “[i]n light of the amendments to Claims 1, 8 and 15, the examiner’s rejections under 35 USC 102/103 have been modified to address the amended claim language,” indicating that Rejection III is not withdrawn by the Examiner); *see* Appeal Br. 18 (arguing correctly that the Examiner “does not identify the elements that are to be combined in finding obviousness and gives no rationale for a person of ordinary skill in the relevant art to be motivated to combine these elements”).

Accordingly, we do not sustain the Examiner’s rejection of claims 1–15, 18, 19, and 21–23 as obvious in view of Green.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1-15, 18, 19, 21-23		non-statutory obviousness-type double patenting		1-15, 18, 19, 21-23
1-15, 18, 19, 21-23	102(a)(2)			1-15, 18, 19, 21-23
1-15, 18, 19, 21-23	103			1-15, 18, 19, 21-23
Overall Outcome				1-15, 18, 19, 21-23

REVERSED