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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* WILLIAM ROSS RAPOPORT, CHIRAG PATEL,  
JACK STEVEN CROITER, KARL D. NELSON, and  
JEFFREY JAMES KRIZ

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Appeal 2019-001418  
Application 14/921,564  
Technology Center 2800

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Before MICHELLE N. ANKENBRAND, *Acting Vice Chief Administrative Patent Judge*, DONNA M. PRAISS, and JEFFREY R. SNAY, *Administrative Patent Judges*.

SNAY, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

STATEMENT OF THE CASE

Appellant<sup>2</sup> filed an appeal under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1–16 and 18–21. We have jurisdiction under 35 U.S.C. § 6(b).

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<sup>1</sup> Our Decision refers to the Specification filed Oct. 23, 2015 (“Spec.”); Final Office Action dated December 12, 2017 (“Final Act.”); Appellant’s Appeal Brief filed June 18, 2018 (“Appeal Br.”), Examiner’s Answer dated October 1, 2018 (“Ans.”), and Appellant’s Reply Brief filed December 3, 2018 (“Reply Br.”).

<sup>2</sup> Appellant is the Applicant, Honeywell International Inc., which, according to the Appeal Brief, is the real party in interest. Appeal Br. 3.

We REVERSE.

The subject matter on appeal relates to systems, devices, and methods for authenticating a value article. Spec. ¶ 3. According to the Specification, an article that incorporates covert features, such as luminescent pigments or fluorescent dyes, may be authenticated by interrogation with an exciting light source. *Id.* ¶ 4. Detector generated authentication signals are said to be negatively impacted by scattered or reflected excitation light when authentication equipment is small. *Id.* The Specification describes electronic detection signal manipulation techniques to reduce the effect of excitation light on an authentication determination. *Id.* ¶ 6. For example, detection signal portions with a modulation frequency of the excitation source can be selectively attenuated. *Id.* ¶ 17. Alternatively, a squelch circuit blocks a detection signal until excitation source illumination ceases. *Id.*

Independent claim 1 is illustrative and is reproduced below from the Claims Appendix of the Appeal Brief. Limitations at issue are italicized.

1. A method for authenticating a value article, wherein the method comprises the steps of:
  - providing the value article comprising a luminescent material, wherein the luminescent material excites by absorbing light and emits radiation with a decay time of greater than 0.05 milliseconds;
  - providing an exciting light source, an optical filter, a photodetector, a signal manipulation circuit, and an amplifier;
  - exposing the luminescent material of the value article to light produced by the exciting light source;
  - filtering radiation comprising light from the exciting light source and emitted radiation from the luminescent material using the optical filter to produce filtered radiation comprising emitted radiation from the luminescent material;
  - detecting the filtered radiation using the photodetector to

produce a detected radiation signal;  
*electronically manipulating the detected radiation signal using the signal manipulation circuit to reduce an effect of light from the exciting light source on an authentication determination based on the detected radiation signal;*  
amplifying the detected radiation signal with the amplifier after the detected radiation signal is electronically manipulated to produce an amplified electronic signal; and  
converting the amplified electronic signal or data derived therefrom to an authentication output.

### REJECTIONS ON APPEAL

- I. Claims 1–10, 12–16, and 18–21<sup>3</sup> under 35 U.S.C. § 103 as being unpatentable over Hopwood<sup>4</sup> and Jones;<sup>5</sup> and
- II. Claim 11 under 35 U.S.C. § 103 as being unpatentable over Hopwood and Jones and further in view of Power.<sup>6</sup>

### DISCUSSION

#### *Rejection I*

Claims 1–10, 12–16, and 18–21 are rejected under 35 U.S.C. § 103 as being unpatentable over Hopwood and Jones.

The Examiner finds Hopwood discloses a method for authenticating a value article comprising a luminescent material, providing an exciting light source, exposing the luminescent material to light produced by the exciting light source, filtering radiation comprising light from the exciting light

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<sup>3</sup> Claim 21 is subject to this ground (*see* Final Act. 11) even though the Examiner omits claim 21 in the statement of the rejection (*id.* at 3).

<sup>4</sup> US 5,918,960, issued July 6, 1999 (“Hopwood”).

<sup>5</sup> US 2007/0246543 A1, published Oct. 25, 2007 (“Jones”).

<sup>6</sup> US 2008/0046199 A1, published Feb. 21, 2008 (“Power”).

source and emitted radiation from the luminescent material using an optical filter, and detecting the filtered radiation. Final Act. 3. Relevant to Appellant's arguments on appeal, the Examiner also finds Hopwood teaches electronically manipulating the detected radiation signal using a signal manipulation circuit "to reduce an effect of light from the exciting light source." *Id.* at 4 (citing Hopwood 7:1–13).

Appellant contends that the Examiner erred in finding Hopwood teaches electronically manipulating a detected radiation signal *to reduce an effect of light from an exciting light source*. Appeal Br. 11 (emphasis added). Specifically, Appellant argues that Hopwood seeks to reduce ambient light impact on photo detectors by modulating the light source's frequency and then extracting information at the same modulated frequency using photo diodes, which, according to Appellant, is not "electronically manipulating . . . to reduce an effect of light from the exciting light source" as recited in claim 1. *Id.* at 11, 13–14, 17–18.

The Examiner responds that Hopwood's disclosed modulation technique is the same and has the same objective as Applicant's electronic manipulation technique. Ans. 2–3 (citing Hopwood 7:10–13).

The Examiner, however, does not sufficiently explain how Hopwood's method would have resulted in reducing an effect of excitation light on an authentication determination. At the relied upon passage, Hopwood states that the described modulation/demodulation is applied "[t]o reduce the effect of ambient light." Hopwood 7:10. The Examiner does not provide substantiated reasoning why Hopwood's technique to reduce effects of ambient light necessarily would have reduced an effect of the excitation light on the authentication detection signal. To the contrary, Appellant

points out that Hopwood's technique demodulates output of the photodiodes at the same frequency as the excitation modulation frequency, which, Appellant reasons, would effectively synchronize excitation light emission with the detection signal output. Appeal Br. 17–18; *see* Hopwood 7:10–13.

For the foregoing reasons, we are persuaded that a preponderance of the evidence does not support the Examiner's finding that Hopwood teaches electronically manipulating the detected radiation signal to reduce an effect of light from the exciting light source. The Examiner applies the same deficient finding in rejecting each of independent claims 1, 12, and 18. Final Act. 4, 8, 10; Ans. 2–3.

Accordingly, we do not sustain the Examiner's § 103 rejection of claims 1–10, 12–16, and 18–21 over Hopwood and Jones.

### *Rejection II*

Claim 11 is rejected under 35 U.S.C. § 103 as being unpatentable over Hopwood and Jones and further in view of Power.

The Examiner does not rely on Power to remedy the deficiencies discussed above with regard to the § 103 rejection over Hopwood and Jones. Therefore, we do not sustain the Examiner's § 103 rejection of claim 11.

## DECISION

On the record before us and for the reasons given in Appellant's Appeal Brief and above, we reverse the Examiner's rejections.

REVERSED