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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SIMON BLYTHE

Appeal 2013–004574
Application 11/965,946
Technology Center 3600

Before ANTON W. FETTING, PHILIP J. HOFFMANN, and
BRADLEY B. BAYAT, *Administrative Patent Judges*.

FETTING, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE¹

Simon Blythe (Appellant) seeks review under 35 U.S.C. § 134 of a final rejection of claims 1, 3–7, 9–15, 25, and 26, the only claims pending in the application on appeal. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

¹ Our decision will make reference to the Appellant’s Appeal Brief (“Br.,” filed August 9, 2012) and the Examiner’s Answer (“Ans.,” mailed November 8, 2012), and Final Rejection (“Final Rej.,” mailed February 7, 2012).

The Appellant invented a way of detecting unauthorized modifications to financial terminals. Specification para. 1.

An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced below (bracketed matter and some paragraphing added).

1. A method of detecting an unauthorized modification of a financial terminal comprising:

[1] providing a detection device

being preloaded with a stored electromagnetic profile,
said stored electromagnetic profile corresponding to an
uncompromised state of the financial terminal;

[2] receiving,

with the detection device,
an electromagnetic profile
emitted from the financial terminal,
said received electromagnetic profile including radio
wave activity if present;

and,

[3] calculating,

with the detection device,
a correlation coefficient
based on said stored electromagnetic profile and said
received electromagnetic profile
to determine,

with the detection device,
whether an unauthorized modification has been made to
the financial terminal.

The Examiner relies upon the following prior art:

Preikschat	US 4,768,034	Aug. 30, 1988
Peterson	US 2005/0078093 A1	Apr. 14, 2005
Ross	US 2006/0169764 A1	Aug. 3, 2006
Block	US 7,093,749 B1	Aug. 22, 2006
Yuzik	US 7,403,115 B2	July 22, 2008
Yajima	US 2008/0305771 A1	Dec. 11, 2008
Breed	US 7,663,502 B2	Feb. 16, 2010
Austin	UK 2270182 A	Mar. 2, 1994

Claims 1, 3–7, 9–15, 25, and 26 stand rejected under 35 U.S.C. § 112, first paragraph, as lacking a supporting written description within the original disclosure.

Claims 1, 3–7, 9–15, 25, and 26 stand rejected under 35 U.S.C. § 112, second paragraph, as failing to particularly point out and distinctly claim the invention.²

Claims 1, 7, 13, 15, 25, and 26 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, and Peterson.

Claims 1, 7, 13, 15, 25, and 26 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, and Breed.

Claims 3, 4, 9, and 10 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, Peterson, and Ross.

² The Examiner's Answer is ambiguous as to whether this rejection remains. Although the Answer at one place indicates the rejection is withdrawn (Ans. 108) the Answer also states the rejection remains in place (Ans. 3 and 6). We treat the rejection as still being applied.

Claims 3, 4, 9, and 10 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, Breed, and Ross.

Claims 5 and 11 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, Peterson, and Austin.

Claims 5 and 11 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, Breed, and Austin.

Claims 6 and 12 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, Peterson, and Yajima.

Claims 6 and 12 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, Breed, and Yajima.

Claim 14 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, Peterson, and Preikschat.

Claim 14 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, Breed, and Preikschat.

ISSUES

The issues of written description and definiteness turn primarily on whether the limitation of receiving an electromagnetic profile emitted from the financial terminal, including radio wave activity if present is both supported by the Specification and definite in scope. The issues of obviousness turn primarily on whether infrared radiation is in the electromagnetic spectrum.

FACTS PERTINENT TO THE ISSUES

The following enumerated Findings of Fact (FF) are believed to be supported by a preponderance of the evidence.

Facts Related to Claim Construction

01. The disclosure contains no lexicographic definition of “emit.”
02. The ordinary meaning of emit is to send something into the air.³

Facts Related to Appellant’s Disclosure

03. Thus, all electronic equipment ha[s] a corresponding electromagnetic fingerprint. However, if the terminal is modified in some way, such as by adding a skimmer (which extracts sensitive information during a transaction), an enhanced definition monitor (ECTV), or a radio transmitter (such as a Bluetooth, global system for mobile communication (GSM), or WiFi transmitter) to the terminal to broadcast transactional data to a remote receiver in the vicinity, the terminal will have a different electromagnetic fingerprint than an unmodified terminal. The device formed in accordance with the present invention is preferably a portable compact detection device or sniffer that can be pre-loaded with known electromagnetic fingerprints of original, unmodified equipment and can then be used to very quickly scan the financial terminal at the point-of-sale or transaction to see if

³ The American Heritage Dictionary of the English Language, Fifth Edition 2015, <https://www.ahdictionary.com/word/search.html?q=emit>

the fingerprint of the terminal is substantially different from its expected electromagnetic profile. Spec. para. 24.

Facts Related to the Prior Art

Block

04. Block is directed to automated banking machines. Block 1:17.

05. Block facilitates the detection of fraudulent activity and reduces the risk of unauthorized access. Block 3:44–58.

06. Block's ATM is provided with radiation sensing devices. The controller is programmed to sense changes in the magnitude of radiation sensed by the one or more radiation sensing devices. The installation of an unauthorized card reading device in proximity to the card reading slot generally produces a change in the magnitude of the radiation sensed by the radiation sensing devices. The exemplary controller is programmed to recognize such changes and to take appropriate action in response thereto so as to reduce the possibility of fraud. Block 6:5–16.

07. Block's housing includes radiation emitting devices that emit visible radiation or nonvisible radiation such as infrared radiation⁴, which can be used for sensing the presence of unauthorized card reading devices adjacent to the card slot. Block's radiation sensing devices are positioned to detect changes in the radiation reflected from the radiation emitting devices. The controller

⁴ electromagnetic radiation having a wavelength in the range from 75×10^{-6} cm to $100,000 \times 10^{-6}$ cm (0.000075–0.1 cm).
<http://encyclopedia2.thefreedictionary.com/infrared+radiation>

compares one or more values corresponding to the magnitude of reflected radiation sensed by one or more of the radiation sensing devices, to one or more stored values and to make a determination whether the comparison is such that there is a probable unauthorized card reading device installed on the fascia of the machine. Block's controller may be execute fuzzy logic programming for purposes of determining whether the nature of the change in reflected radiation is such that there has been an unauthorized device installed and whether appropriate personnel should be notified. Block 26:17–52.

08. Block describes how the installation of an unauthorized card reading device changes the amount of radiation from emitting devices and that is reflected to the sensors. Depending on the nature of the device and its structure, the amount of reflected radiation may increase or decrease. However, a detectable change will often occur in the magnitude of sensed radiation between a present transaction and a prior transaction which was conducted prior to an unauthorized card reading device being installed. Block 27:3–12.

Yuzik

09. Yuzik is directed to surveillance of suspects of automated banking machine (ABM) fraud. Yuzik 1:7–9.
10. Yuzik describes an illustrative detector for detecting the presence of an unauthorized foreign device. The detector may be configured and calibrated to detect a steady state electromagnetic

field “signature” generated in the vicinity of bank card slot and may then be configured to detect changes in the electromagnetic field when a foreign device with components capable of disturbing the electromagnetic field is placed in the vicinity of bank card slot. For example, skimmers capable of reading the magnetic stripe on bank card and placed near bank card slot will normally include circuitry and/or components that will sufficiently disturb the electromagnetic field to be detected by detector. By way of example, the detector may be an electromagnetic field based skimmer detector manufactured by Wincor Nixdorf of Paderborn, Germany. Yuzik 6:2–19.

Peterson

11. Peterson is directed to touch input devices. Peterson para. 1.
12. Peterson describes developing signal profiles that characterize intended or unintended signal data in terms of one or more of the features of a signal as a function of time. A correlation can be performed on the features of the candidate signal and that of the signal profile to generate a correlation coefficient. The calculated correlation coefficient can be compared to a threshold (e.g., 80%) to discriminate between intended and unintended signal causes. Peterson para. 57.

Breed

13. Breed is directed to controlling systems in an asset. Breed 8:6–8.
14. Breed describes detecting by pulse modulating either a carrier wave or sending pure pulses of electromagnetic radiation to the

reflection surfaces and comparing the returned signal with the transmitted signal through a correlation analysis. Breed 443:21–32.

ANALYSIS

Claims 1, 3–7, 9–15, 25, and 26 rejected under 35 U.S.C. § 112, first paragraph, as lacking a supporting written description within the original disclosure

We are persuaded by the Appellant’s argument that the Specification paragraph 24 supports the limitation “including radio wave activity if present.” Br. 4. The Examiner found that the “if present” this limitation suggests that what is received in limitation [2] may not be made up of electromagnetic radiation. This is an inaccurate reading of the limitation because it is the “activity” rather than the electromagnetic radiation per se that may not be present. This is supported by Specification paragraph 24 describing sniffer or the like activity that may or may not be present.

Claims 1, 3–7, 9–15, 25, and 26 rejected under 35 U.S.C. § 112, second paragraph, as failing to particularly point out and distinctly claim the invention

We are persuaded by the Appellant’s argument that Specification paragraph 24 clarifies that radio–wave activity may or may not be present, depending on whether something is occurring that affects (e.g. modulates) the emitted profile. Br. 5. Again, it is the activity rather than the emitted electromagnetic (radiation) profile that may or may not be present. The

claimed use of the word emit requires that the electromagnetic profile be radiated.

Claims 1, 7, 13, 15, 25, and 26 rejected under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, and (Peterson or Breed)

The Examiner applied Block for its description of a detection device preloaded with a stored electromagnetic profile of an uncompromised state of a financial terminal, receiving an electromagnetic profile of an uncompromised state of the financial terminal and determining from some algorithm comparing the emitted and stored profiles whether an unauthorized modification has been made. Block actually describes such unauthorized modification arising from an unauthorized card reading device, similar to the types of unauthorized use described in Appellant's Specification. *See* FF 04–08. The Examiner applied Yuzik to show that such stored and emitted profiles may be in the form of a steady state and subsequent actual electromagnetic field “signature” and that the fraudulent activity may arise from circuitry creating radio waves, and Peterson and Breed to show computing a coefficient for statistical comparison purposes as would be appropriate in Block's comparison.

We are not persuaded by the Appellant's argument that “the Examiner asserted that ‘nonvisible radiation’ in Block ‘obviously includes radio frequency radiation’. However, Block requires reflectable radiation. Radio-waves are not reflectable radiation. Block relies on reflection of radiation to indicate tampering. Radio-waves are not useable for this purpose.” Br. 5.

As the Examiner found (Ans. 111), infra-red is part of the electromagnetic spectrum and electromagnetic waves are reflectable depending on wavelength and medium. Satellite dishes are common examples of radio wave reflection immediately apparent to any lay person let alone one of ordinary skill. Further what is recited as being emitted is an electromagnetic profile rather than radio waves. The only recitation of radio waves in the claims modifies activity, as we found supra in the rejections under 35 U.S.C. § 112. This may be no more than modulation of the emitted electromagnetic profile. More critical still, the claim makes no recitation of reflection or non-reflection of radio waves. Also, as the Examiner found, Block refers to generic radiation sensing rather than only to infra-red radiation specifically. Infra-red is described as one embodiment. Thus, the full scope described by Block encompasses the portion of the electromagnetic spectrum conventionally referred to as ordinary radio waves.

We are not persuaded by the Appellant's argument that "any hypothetical combination of Block and Yuzik would utilize a radio listening device which requires a person to actually hear radio activity for detecting. This is a different approach from that provided by the subject invention." App. Br. 7.

First, the Examiner did not find it was predictable to bodily incorporate Yuzik wholesale into Block. "The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. . . . Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art." *In re Keller*, 642 F.2d 413, 425, (CCPA 1981). *See also In re*

Sneed, 710 F.2d 1544, 1550, (Fed. Cir. 1983) (“[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review.”); and *In re Nievelt*, 482 F.2d 965, (CCPA 1973) (“Combining the teachings of references does not involve an ability to combine their specific structures.”).

Second, as the Examiner found, Block describes automatically performing the detection. Ans. 112–115. Third, nothing in the claim excludes a person from actually hearing radio activity for detecting as well.

Although Appellant nominally also argues the reliance upon Breed (Br. 7), these arguments only contend that these references do not ameliorate the above contentions. None of the remaining rejections are separately argued.

CONCLUSIONS OF LAW

The rejection of claims 1, 3–7, 9–15, 25, and 26 under 35 U.S.C. § 112, first paragraph, as lacking a supporting written description within the original disclosure is improper.

The rejection of claims 1, 3–7, 9–15, 25, and 26 under 35 U.S.C. § 112, second paragraph, as failing to particularly point out and distinctly claim the invention is improper.

The rejection of claims 1, 7, 13, 15, 25, and 26 under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, and Peterson is proper.

The rejection of claims 1, 7, 13, 15, 25, and 26 under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, and Breed is proper.

The rejection of claims 3, 4, 9, and 10 under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, Peterson, and Ross is proper.

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The rejection of claims 6 and 12 under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, Peterson, and Yajima is proper.

The rejection of claims 6 and 12 under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, Breed, and Yajima is proper.

The rejection of claim 14 under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, Peterson, and Preikschat is proper.

The rejection of claim 14 under 35 U.S.C. § 103(a) as unpatentable over Block, Yuzik, Breed, and Preikschat is proper.

DECISION

The rejection of claims 1, 3–7, 9–15, 25, and 26 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2011).

Appeal 2013-004574
Application 11/965,946

AFFIRMED

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