Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte NURGUN ERDOL
and
FENG BAO

Appeal No. 1998-2379
Application No. 08/315,942

ON BRIEF

Before THOMAS, HAIRSTON, and DIXON, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 21, 31 to 33, and 36 to 39. Claims 1 through 20 have been allowed, and claims 22 to 30, 34, 35, 40 and 41 are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

BACKGROUND

The invention is an apparatus and method of detecting an electronic article surveillance marker using wavelet transform signal processing.

Representative independent claim 21 is reproduced as follows:

> 21. An electronic article surveillance system comprising:
>
> means for generating and radiating an interrogation signal;
>
> means for receiving an analog signal that includes a target signal formed by an electronic article surveillance marker upon exposure to the radiated interrogation signal and interference signals correlated with the target signal;
>
> analog filter means for filtering the received analog signal;
>
> conversion means for converting the filtered analog signal into a digital signal; and
>
> an integrated circuit signal processing device for receiving said digital signal, said integrated circuit signal processing device being programmed to perform a wavelet transform on the received digital signal.

The following references were relied upon by the examiner:

Humphrey	4,660,025	Apr. 21, 1987
Andrews	4,920,335	Apr. 24, 1990
Martin al. (Martin)	5,140,332	Aug. 18, 1992

Tuteur, "Wavelet Transformations in Signal Detection," IEEE, 1435-38 (1988).

Frisch et al. (Frisch), "The Use of the Wavelet Transform in the Detection of an Unknown Transient Signal," 38 IEEE Transactions on Information Theory, No. 2, 892-97 (Mar. 1992).

Claims 21, 32, 33, 36, 38 and 39 stand rejected under 35 U.S.C. § 103 as being unpatentable over Martin in view of Tuteur or Frisch and in further view of Andrews.

Claims 31 and 37 stand rejected under 35 U.S.C. § 103 as being unpatentable over Martin in view of Tuteur or Frisch and Andrews and in further view of Humphrey.

Reference is made to the briefs (paper numbers 15 and 17) and the answer (paper number 16) for the respective positions of appellants and the examiner.

OPINION

The obviousness rejections of claims 21, 31 to 33,

and 36 to 39 are reversed.

The Martin reference is directed to "a radar system in which a solid-state, long radar pulse transmitter is used with a short coded pulse radar processor and, more particularly, to a system in which a long pulse compression filter is provided in the receiver to convert the long pulse into the short pulse expected by the signal processor allowing retrofit of existing radar systems with the more reliable solid-state transmitters or to the design of a system in which hard limiting constant false alarm rate processing is desired" (column 1, lines 10 to 19). It is the examiner's position that Martin teaches use of a basic radar surveillance system (answer, page 4). The examiner further states that, "[t]his basic radar system is generally applicable to the claims and to any basic radar (or other) surveillance system, including that of Andrews" (answer, page 4). Andrews discloses an electronic article surveillance device (e.g., used by retailers as a security tag to discourage theft) that may be rendered inoperative via several techniques (column 1, lines 7 to 17). For example, the Andrews' device can be deactivated by a

frequency that is selected from readily available

electromagnetic radiation such as microwave energy or police radar energy (Abstract).

As motivation for combining the teachings of Martin and Andrews, the examiner states that "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to use the basic radar components of Martin et al. and also that EAS markers are conventionally used with radar systems, since Martin et al. provide for 'reliable solid-state transmitters' in c. 1, lines 10-20, and for improved 'radar range coverage' in the abstract, and because Andrews provides for a radar anti-theft system
in the abstract, and for easily attachable EAS devices and for their deactivation in c. 1, lines 5-23." (Answer, pages 3-4).

The examiner cited Tuteur and Frisch because they employ wavelet transforms in the use of signal detection. According to the examiner (answer, page 6), "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to use the wavelet transform of Tuteur, since he provides for adaptively

generating the basis wavelet as noted in the last paragraph under wavelet transforms on page 1436, and because wavelets are well adapted to short-time signals such as for example in radar where the signals are very short." Humphrey represents the state of the electronic surveillance marker art prior to appellants' invention.

Appellants argue (brief, page 4) that the examiner's rejections are erroneous because: (1) the art applied is nonanalogous to the claimed invention; (2) the means-plus-function claim limitations were not interpreted in the manner required by the Court in In re Donaldson Co., 16 F.3d 1189, 29 USPQ2d 1845 (Fed. Cir. 1994); and (3) there is no motivation to combine the references. The appellants' fourth argument is merely an amalgamation of the first three arguments and therefore does not require a separate analysis.

Appellants present compelling arguments about the nonanalogous nature of Martin to the claimed invention (brief, pages 9 and 10). Martin is a radar system that detects the presence of an object by bouncing a signal off of that object. Appellants' invention uses signal

processing to detect a target signal generated by the object (i.e., the EAS marker) (brief, page 2). Thus, Martin is neither in the same field of endeavor nor is it pertinent to the particular problem addressed by appellants, and, it is, therefore, clear that Martin is not analogous to the claimed invention. (See M.P.E.P. § 2141.01(a)).

It is noted that Andrews relies upon frequencies that are selected from available energies such as microwave or police radar (abstract); however, Andrews' use of police radar energy does not present a convincing reason for the combination of the two references.

As indicated supra, we agree with appellants' argument that the claims on appeal should have been interpreted in the manner required by the Court in Donaldson. The claimed invention is presented in a means-plus-function and a step-plus-function format, and, therefore, the claims should have been construed to "cover[] the corresponding structure[, material or acts] described in the specification and equivalents thereof" (brief, page 7). Appellants argue that "in light of the

disclosure of the present application, the recited 'means for generating and radiating . . . ' and the 'means for receiving . . . ' are to be construed as covering, respectively, conventional EAS system transmitting and receiving equipment, and equivalents" (brief, page 12). It is clear from the record that the examiner's application of the prior art was not commensurate with the metes and bounds of the claims on appeal. For example, one of ordinary skill in the art would not construe the radar system disclosed in Martin as a system that would function in an electronic article surveillance system such as the one claimed by the appellants.

Finally, appellants argue that there is no motivation to combine the references cited by the examiner (brief, pages 4 and 14 to 16). We agree. To establish a prima facie case of obviousness, three basic criteria must be met: first, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a

reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicants' disclosure. In re Vaeck, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). The outstanding rejections do not meet any of the criteria established in Vaeck. It is readily apparent that the examiner combined the references based upon the appellants' disclosed and claimed invention because the references do not provide a teaching or suggestion to combine. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. In re Fine, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1599 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 351, 21 USPQ2d 1941, 1943-44 (Fed. Cir. 1992).

Based upon the foregoing, the obviousness rejections are reversed.

DECISION

The decision of the examiner rejecting claims 21, 31 to 33, and 36 to 39 under 35 U.S.C. § 103 is reversed.

REVERSED

JAMES D. THOMAS Administrative Patent Judge	)	
KENNETH W. HAIRSTON Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
JOSEPH L. DIXON Administrative Patent Judge	)	

KWH/CW:hh

Appeal No. 1998-2379
Application No. 08/315,942

JOHN J. TORRENTE
ROBIN, BLECKER, DALEY & DRISCOLL
330 MADISON AVE.
NEW YORK, NY 10017