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Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PHILIP H. SUTTERLIN
and ALEX CHERVET

Appeal No. 2002-1318
Application No. 08/693,662

ON BRIEF

Before THOMAS, LEVY, and SAADAT, Administrative Patent Judges.
LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-6, which are all of the claims pending in this application.

BACKGROUND

Appellants' invention relates to a method and apparatus for using unintended radio frequency propagation. An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced as follows:

1. A repeater for coupling data from a first power line to a second power line where the power lines are each a data communications medium comprising:

a radio frequency receiver tuned to sense data signals propagated from the first power line, the first power line serving as a first data communications medium for a plurality of first nodes; and,

a power line transmitter coupled to the radio frequency receiver and the second power line, the second power line serving as a second data communications medium for a plurality of second nodes, so that the data signals originating from the first data communications medium and sensed from the first power line by the receiver are coupled to the power line transmitter for the second data communications medium without the use of an RF transmitter on the first power line.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Dockery	5,327,230	Jul. 5, 1994
Copley et al. (Copley)	5,444,695	Aug. 22, 1995
Downey et al. (Downey)	5,553,081	Sep. 3, 1996 (filed Apr. 4, 1994)
West	5,574,979	Nov. 12, 1996 (filed Jun. 3, 1994)

Appeal No. 2002-1318
Application No. 08/693,662

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejections advanced by the examiner, and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

Upon consideration of the record before us, we reverse. We begin with the rejection of claims 1, 3, and 5, which includes all of the independent claims before us on appeal.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed

Appeal No. 2002-1318
Application No. 08/693,662

invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole. See id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

The examiner's position (answer, page 4) is that "West differs from the instant claimed invention as follows: (1) West fails to teach the use of power lines as the communication medium for each of the branches and (2) West fails to teach the use of

Appeal No. 2002-1318
Application No. 08/693,662

the power line of the first branch as an aerial antenna to radiate data signals to the second branch, and vice versa." To overcome these deficiencies in West, the examiner turns to Downey for teaching of a communication system using a power line as a communications medium. The examiner asserts (id.) that it would have been obvious to have modified the network of West to communicate over existing power lines to reduce cost. The examiner additionally asserts (id.) that Dockery teaches that a power line used as a communication medium in a communication system may also be used as an aerial antenna. The examiner argues (answer, pages 4 and 5) that it would have been obvious to incorporate the teaching of Dockery into the communication system of West in view of Downey, so as to eliminate redundant RF transmitters and antenna of West/Downey to reduce the hardware complexity and cost.

Appellants do not dispute the combinability of West and Downey, and admit (brief, page 4) that "[a]pplicants concede that West in view of Downey suggests a communication system wherein data is transmitted between separate communication mediums comprised of power lines." Rather, appellants assert (id.) that neither of these references teach the sensing of data from a communications medium without the use of an RF transmitter. It

Appeal No. 2002-1318
Application No. 08/693,662

is argued (brief, page 5) that the system taught by West in view of Downey, would not suggest incorporating the teachings of Dockery because communication signals are already successfully coupled between separate lines with a wireless link, which includes the use of a transmitter and receiver. Appellants further argue (id.) that in West in view of Downey, neither reference suggests using a power line as an antenna to accomplish the task of communicating signals between separate power lines. It is further argued (id.) that there is no teaching in West, Downey or Dockery for using stray propagation from a power line, and (brief, page 6) that none of the references teaches the sensing of data where the signal is an unintended byproduct of communication in a network.

From our review of the record, we find that the issue before us is whether it would have been obvious to have deleted the RF transmitter in the combined teachings of West and Downey, in view of the disclosure of Dockery. With regard to appellants' assertion (brief, page 6) that none of the references teaches the sensing of data where the signal is the unintended byproduct of communications in a network, we note that appellants' claims do not recite that the sensed signal is an unintended byproduct of communications in a network. Nor do appellants' claims recite

that the signal is stray propagation from a power line, as advanced by appellants (brief, page 5).

From the disclosure of Dockery, we find that in a first embodiment, video and audio signals are transmitted across an existing home power line with a transmitter, and that the signal is tapped from the power line using a receiver (col. 2, lines 29-34). In addition, the transmitted video signal is broadcast from the power line, using the power line as an aerial antenna, to approximately 200 feet from all points on the power line (col. 3, lines 3-6). In the second embodiment, the signal may be broadcast from existing home wiring and may be multiplied for a plurality of receivers for a plurality of power outlets available in the home power line by aurally receiving the video and audio signals at the any number of receivers (col. 2, line 64 through col. 3, line 16). Dockery further discloses (col. 11, lines 13-32) that the receiver may be used to pick up broadcast television, without the assistance of the transmitter. In the arrangement of figure 5, the VCR 34 and transmitter 10 may be detached from power line 50. This isolates the television receivers 40A-40C from the VCR 34. To receive a television broadcast channel, the user sets the television to the desired channel and adjusts switches 101-106 in switching circuit 92 to

Appeal No. 2002-1318
Application No. 08/693,662

alter the impedance at the receiver to tune the television to the desired channel using the power lines as an antenna. By altering the switches 101-106, the user effectively tunes the television channel reception using the receiver as an alternative to an aerial antenna to tune into an aerial broadcast signal. Thus, the receiver alone, without the television or the transmitting unit, has independent value as an advantageous replacement for aerial broadcast reception at any broadcast frequency.

From these disclosures of Dockery, we find that in the second embodiment, the signal is broadcast over the power lines to be received at any location within 200 feet from the power lines, and is received through aerial reception by the receiver. However, we find that the signal broadcast over the power lines is originally transmitted over the power lines by the transmitter. In addition, from the disclosure of Dockery that amplifiers 72 and 74 of transmitter circuit 60 of transmitter 10 are RF amplifiers (col. 5, line 48) we find that Dockery discloses the use of RF transmitters. Thus, we find that Dockery does not suggest that the video signal is transmitted without the use of an RF transmitter on the first power line. Moreover, in the additional embodiment of Dockery, where the transmitter is

Appeal No. 2002-1318
Application No. 08/693,662

removed, we find that the received television broadcast signal was broadcast over the airways from the service provider's transmitter, which we consider to be an RF transmitter, and is not a data signal propagated from a first power line to a second power line, without the use of an RF transmitter on the first power line.

In addition, we note that all of the claims under appeal require sensing of data signals propagated from the first power line without the use of an RF transmitter on the first power line. For the reasons above, this limitation is not suggested by the applied prior art. In that regard, while Dockery does teach that a power line used in a communications system may also be used as an aerial antenna, as advanced by the examiner (answer, page 4), the transmitted signal over the power line that generates the RF signal propagated to a range of 200 feet from the power line is an RF transmitted signal. Therefore, Dockery does not teach or suggest that the data signal is propagated from the first power line and sensed by the receiver without the use of an RF transmitter. In addition, even if we are incorrect our interpretation of Dockery, and assuming, arguendo, that Dockery teaches the sensing of a signal propagated from the first power line without the use of an RF transmitter, we find that because

Appeal No. 2002-1318
Application No. 08/693,662

West is directed to avoiding interference in RF communications, and Downey is directed to the use of tone detection and adaptive thresholds to detect valid signals from noise, that an artisan would not have been motivated to combine the teachings of Dockery with the combined teachings of West and Downey, as advanced by the examiner. Thus, we agree with appellants (brief, page 5) that in the system taught by West and Downey, communications signals are already successfully coupled between separate lines with a wireless link, which includes a transmitter and receiver, and that there is no need for the antenna taught in Dockery; i.e., that there is no reason to delete the RF transmitter from the combined teachings of West and Downey. In our view, the only suggestion for modifying in the manner proposed by the examiner to meet the above-noted limitations stems from hindsight knowledge derived from the appellants' own disclosure. The use of such hindsight knowledge to support an obviousness rejection under 35 U.S.C. § 103 is, of course, impermissible. See, for example, W. L. Gore and Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). It follows that we cannot sustain the examiner's rejections of claims 1, 3, and 5. Accordingly, the

Appeal No. 2002-1318
Application No. 08/693,662

rejection of claims 1, 3, and 5 under 35 U.S.C. § 103(a) is reversed.

We turn next to the rejection of claims 2 and 4 under 35 U.S.C. § 103(a) as unpatentable over West in view of Downey and Dockery, and further in view of Copley. We do not sustain the rejection of claims 2 and 4 as Copley does not make up for the deficiencies of the basic combination of West and Downey. Accordingly, the rejection of claims 2 and 4 under 35 U.S.C. § 103(a) is reversed.

We turn next to the rejection of claim 6 under 35 U.S.C. § 103(a) as being unpatentable over West in view of Downey and Dockery, and further in view of Lee. We do not sustain the rejection of claim 6 as Lee does make up for the deficiencies of the basic combination of West in view of Downey. Accordingly, the rejection of claim 6 under 35 U.S.C. § 103(a) is reversed.

NEW GROUND OF REJECTION UNDER 37 CFR §1.196(B)

We also use our authority under 37 CFR § 1.196(b) to enter a New Ground of Rejection of claims 1-6 under 35 U.S.C. § 112, second paragraph. The basis for the rejection is set forth in detail, infra.

With respect to independent claims 1, 3, and 5, each of the claims recites that the sensed data signal is propagated from the first power line without the use of an RF transmitter on the first power line. However, appellants assert (brief, page 5) that "the present invention accomplishes the same task as West in view of Downey without the use of an RF transmitter by exploiting the unintended and undesirable radio frequency propagation generated by the high-frequency data signals being transmitted over power lines." From this statement of appellants, we find that when transmitting a high frequency data signal over power lines, that an unintended and undesirable radio signal is propagated, without the use of an RF transmitter. Appellants further assert (brief, page 6) that "the present invention relates to a network of power lines where it would be difficult and/or detrimental to directly couple data signals transmitted on one power line onto another power line. A typical solution to this problem is the use of an RF transmitter, which the present invention eliminates." From this statement of appellants, we find that it was typical in the art to solve the problem relating to the difficulty of couple signals from one power line to another line, by using an RF transmitter. In addition,

Appeal No. 2002-1318
Application No. 08/693,662

appellants specification discloses (page 6), with respect to figure 1, that:

If node N1 has a message for node N5, the message must be transmitted through the source 13. The source 13 typically involves a transformer or the like which does not provide an effective transmission path for a data signal having a frequency much higher than the power frequency. For instance, where each node includes a transceiver such as manufactured by Echelon Corporation, part no. PLT-20/21, signals are transmitted between the nodes at a frequency (when compared to 60Hz) of 131.5789kHz. This relatively high frequency is in some instances not effectively transmitted from line 14 to lines 15 or 16 through a transformer.

We find from this disclosure of appellants that it was known to transmit signals between the nodes of power lines at a high frequency, e.g., 131.5789kHz (i.e. 132kHz). The specification additionally discloses (id.) with respect to figure 2 that "these lines are not connected in a way that permits effective distribution of a high frequency (e.g., 132kHz) communications signal," and that (page 7) "[t]he RF receivers 24 and 25 may be ordinary radio frequency receivers tuned to receive signals of the frequency of the communication signal in the network (e.g., 132kHz)."

From the disclosure that the transmitted signal is at 132kHz and that the signals picked up by RF receivers 24 and 25 is 132kHz, we find that the signals transmitted between the nodes of

Appeal No. 2002-1318
Application No. 08/693,662

the power lines at 132kHz are transmitted by an RF transmitter. Thus, even though the 132kHz signal sensed by RF receivers 124 and 125 is propagated across the power lines without the use of an RF transmitter at the first power line, we find that the propagated signal received by RF receivers 24 and 25 results from a signal transmitted on a power line by an RF transmitter. Accordingly, we find that the statement in the claims "without the use (using) an RF transmitter coupled to the first power line" to be misdescriptive of the invention. In other words, even though the unintended signal propagated across the power lines and sensed by RF receivers 124 and 125, is not itself transmitted by an RF transmitter, the propagated signal results from the transmission of a signal on the power line by an RF transmitter. Since an RF transmitter is used to transmit a signal on the power lines that produces the signal that is propagated across the power lines, the claimed recitation that there is no RF transmitter on the first power line is misdescriptive of the invention, making the metes and bounds of the claims indefinite.

Appeal No. 2002-1318
Application No. 08/693,662

CONCLUSION

In summary, we have reversed the Examiner's 35 U.S.C. § 103(a) rejections of claims 1-6. We have entered a New Ground of Rejection against claims 1-6 under 37 CFR § 1.196(b).

As indicated supra, this decision contains a New Ground of Rejection pursuant to 37 CFR § 1.196(b)(amended effective Dec. 1, 1997, by final rule notice, 62 Fed. Reg. 53131, 53197 (Oct. 10, 1997), 1203 Off. Gaz. Pat. Office 63, 122 (Oct. 21, 1997)). 37 CFR § 1.196(b) provides that, "A new ground of rejection shall not be considered final for purposes of judicial review."

37 CFR § 1.196(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of proceedings (§ 1.197(c)) as to the rejected claims:

- (1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .

Appeal No. 2002-1318
Application No. 08/693,662

(2) Request that the application be reheard under
§ 1.197(b) by the Board of Patent Appeals and
Interferences upon the same record. . . .

No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR §
§ 1.136(a).

REVERSED
37 CFR § 1.196(b)

JAMED D. THOMAS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
STUART S. LEVY)	APPEALS
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MAHSHID D. SAADAT)	
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Appeal No. 2002-1318
Application No. 08/693,662

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