

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte Shin-Ichiro Matsuda
and Tomoatsu Ino

Appeal No. 95-4530
Application 08/077,993¹

ON BRIEF

Before URYNOWICZ, MARTIN and LEE, Administrative Patent Judges.
URYNOWICZ, Administrative Patent Judge.

DECISION ON APPEAL

This appeal is from the final rejection of claims 1-12,

¹Application for patent filed June 18, 1993.

14-16 and 19-22, all the claims pending in the application.

The invention pertains to a method and apparatus for determining the electrical wiring state of electric wiring.

Claims 1, 11 and 21 are illustrative and read as follows:

1. A method of determining an electric wiring state, comprising the steps of:

feeding at least one pulse voltage signal into one of two lines short-circuited at their two source portions;

detecting the pulse voltage signal at two end portions corresponding to the two source portions; and

discriminating wiring state between the two source portions and the corresponding two end portions upon a comparison of polarities between the fed pulse voltage signal and the detected signal.

11. An apparatus for determining an electrical wiring state, comprising:

an oscillation device for feeding at least one pulse voltage signal into one of two lines short-circuited at their two source portions;

a discrimination device for detecting the signal at two end portions corresponding to the two source portions and discriminating polarities of the fed pulse voltage signal and the detected signal;

wherein said discrimination device includes

a polarity distinction circuit adapted to sense a plus element and minus element of the fed pulse voltage signal from the two end portions to thereby distinguish a straight polarity when the order of the elements are the same to that from said oscillation device and a reversed polarity when

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the order of the elements are opposed to that from said oscillation device;

a silence distinction circuit to compare the signal from the lines with the pulse voltage signals from said

oscillation device to thereby issue a discrimination as there is no signal when it does not have a confirmation that the pulse signals originates from said oscillation device; and

a voltage value measurement circuit adapted to confirm voltage values at end portions connected to the two lines and an electric power line with predetermined values.

21. A system for determining an electric wiring state in first and second conductors having first and second source portions and end portions, the first and second source portions being short-circuited to ground potential, comprising:

an oscillator connected to one of the first and second conductors, generating a pulse signal conducted by the one of the first and second conductors in first and second directions as first and second pulse signals;

a voltage measure circuit connected to said first and second conductors, detecting the first and second pulse signals at the first and second end portions of the first and second conductors, respectively; and

means for discriminating the electric wiring state between the first and second source portions and the first and second end portions by comparing a difference in polarity between the first and second pulse signals and the pulse signal.

The reference relied upon by the examiner as evidence of obviousness is:

Metcalf et al. 4,445,085 April 24, 1984

The appealed claims stand rejected as follows:

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a) claims 11, 12, 14-16, 21 and 22 under 35 U.S.C. § 112, first paragraph, as being based on a specification which fails to comply with the enablement requirement of this section of the statute.

b) claims 1-10, 19 and 20 under 35 U.S.C. § 103 as being unpatentable over Metcalf et al.

The respective positions of the examiner and the appellant with regard to the propriety of these rejections are set forth in the final rejection (Paper No. 10) and the examiner's answer (Paper No. 18) and the appellant's brief and reply brief (Paper Nos. 17 and 19)².

The Rejections Under 35 U.S.C. § 112, First Paragraph

a) Claims 21 and 22:

Claims 21 and 22 require that an oscillator be connected to a conductor. The examiner's position is that the term

² The examiner's answer is identified in the upper right hand corner of page 1 as Paper No. 19. That designation appears erroneous because there is no physical paper entered in the file as Paper No. 18 and appellants' brief and reply brief are marked as Paper Nos. 17 and 19, respectively. Furthermore, in the table of contents of appellants' application, Paper No. 18 is identified as the "Examiner's Answer".

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"connected" requires an actual contact between the oscillator and conductor. Whereas appellants' disclosure does not show oscillator 22 actually in contact with the neutral conductor N but connected to the conductor through trans connection device 21, it is the examiner's position that claims 21 and 22 are based on a specification which fails to comply with the enablement requirement of 35 U.S.C. § 112, first paragraph. We reverse the rejection.

The term "connected" does not require actual contact between connected elements as asserted by the examiner. The accepted definition of the term is restricted to neither a direct nor an indirect connection, and it is therefore applicable to an indirect connection. Ullstrand v. Coons, 147 F.2d 698, 700, 64 USPQ 580, 581 (CCPA 1945).

b) Claims 11, 12 and 14-16:

The examiner contends that these claims are deficient because there are no details of a circuit in the disclosure showing how to implement the silence distinction circuit. The examiner's answer states at page 3 that "Claims 11-12, 14-16 and 21-22 stand rejected under 35 U.S.C. § 112, first paragraph, as explained in paper 10." Paper No. 10 indicates at page 2 that claim 11 has been amended to recite a silence distinction circuit

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that has been objected to before as not being enabled in the specification and that claims 11, 12 and 14-16 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification. The examiner's previous rejection indicated, inter alia, that the specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an enabling disclosure for the circuitry capable of

performing the function of the silence distinction circuit recited in claim 17 (Paper No. 7, page 3). We reverse the rejection.

The examiner has provided no more than the observation that appellant has failed to provide specific circuitry for the distinction circuit and the conclusion that this failure renders the specification non-enabling with respect to the above claims. However, patents are often granted to applicants where the details of apparatus for performing known electronic functions are not disclosed. Such apparatus includes counters and comparators, even central processing units (CPU's). Patents are not production documents. Here, it was incumbent on the examiner to set forth a reasonable basis to conclude that one skilled in

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the art would not have been able to carry out the claimed invention and he did not do so. In re Eynde, 480 F.2d 1364, 1370, 178 USPQ 470, 474 (CCPA 1973).

The Rejection Under 35 U.S.C. § 103

a) Appellants' Invention:

Appellants disclose a method and apparatus for determining the electrical wiring state of electrical wiring. An application of the invention is the detection of faulty house wiring.

With respect to FIG. 1, appellants disclose electric power lines E, a ground line G and a neutral line N. Oscillator 22 feeds at least one voltage pulse into an electric line N. Line N has a source portion short circuited to the source portion of line G at ground potential. Induced voltage P1 advances along line N to the end portion thereof and induced voltage P2 of opposite polarity advances along line G to the end portion thereof. The electric wiring state is determined utilizing a discrimination circuit 30 by comparing the difference in polarity between the voltage pulses at the source and end portions of the line.

b) The Prior Art:

In FIG. 1, the Metcalf patent discloses a current sensing circuit 42 for sensing a direction of flow of an injected current pulse along a conductor 106 (FIGS. 2 and 3) of a circuit under test. The conductor comprises part of a circuit, such as a printed circuit, which has several components connected to a node where a circuit or component fault is known to be present. A probe 12 introduces the injection current to the conductor at the node. The current has a triangular wave form as illustrated in FIGS. 2(a) and 2(d) to facilitate discrimination of the direction of current flow. A U-shaped ferrite core 46 forms part of the

current sensing circuit and is simultaneously placed near conductor 106 so that the magnetic field associated with the pulse of current flowing through conductor 106 induces a corresponding voltage in coil 44 which triggers one of two comparators 50 and 52 in accord with the polarity of the current pulse. The probe 12 and core 46 can be separated along the conductor 106 (col. 8, l. 34-38). The polarity of the voltage pulse induced across coil 44 depends on the direction of the magnetic field inducing the pulse. Thus, the display logic 54 receives a signal from both a polarity latch 18 and one of the triggered comparators to indicate the direction of the circuit fault.

c) Opinion:

We reverse the rejection of method claims 1-10, 19 and 20 under 35 U.S.C. § 103 as being unpatentable over Metcalf et al. We find that there are differences between the subject matter sought to be patented and the prior art as taught by the above reference and that it has not been established that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. With respect to the only

independent claims 1 and 19, Metcalf et al. does not detect the voltage signal at the two end portions of short circuited lines; nor does the reference compare polarities between the fed pulse voltage signal and the detected signal so as to discriminate the wiring state between the two source portions and the corresponding two end portions. At most, Metcalf et al.'s method involves detection of an electric signal along an electric line. The position of the examiner to the effect that the conductors 106 of Figures 2(b) and 2(c) of the reference are short circuited at their source portions in a common circuit is not well taken. These figures illustrate alternative ways of locating different points on a conductor for detecting faults and do not disclose the short circuiting of two wires in a common circuit.

Even assuming for the purpose of argument that appellants utilize Metcalf et al.'s basic method of detecting a conductor fault, it has not been established that the reference considered as a whole would have suggested the method of appellants' claims for determining the electrical wiring state of two short circuited conductors. The bare conclusion that the method of Metcalf et al. is applicable to any preexisting wiring condition is not persuasive.

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Summary

In summary:

a) the decision of the examiner to reject claims 11, 12, 14-16, 21 and 22 under 35 U.S.C. § 112, first paragraph, is reversed; and

b) the decision of the examiner to reject claims 1-10, 19 and 20 under 35 U.S.C. § 103 is reversed.

REVERSED

STANLEY M. URYNOWICZ, JR.)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
JOHN C. MARTIN)	
Administrative Patent Judge)	APPEALS AND
)	
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)	
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