

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JONATHAN DAHLSTROM
DONALD E. ELLISON
RICHARD RATKE

Appeal No. 2001-0376
Application No. 08/780,204

ON BRIEF

Before THOMAS, KRASS and JERRY SMITH, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1-6 and 8.

The invention is directed to testing switches. In order to test switches to make sure they do not present an unduly high resistance to an operator, the force required to move the switch was measured. Whereas the conventional method of testing switches

comprised looking at the magnitude of the resistance force by plotting the resistance force with respect to switch movement, the instant invention focuses on the tactile feel of the switch movement to an operator by plotting the second derivative of the plot of force against movement. Spikes occurring between end points of this plot would require further investigation when they do not occur at a detent position.

Representative independent claim 1 is reproduced as follows:

1. A method of testing a switch comprising the steps of:
 - (1) identifying a switch to test;
 - (2) developing a plot of the second derivative of resistance force to movement for said switch; and
 - (3) investigating spikes in said second derivative plot.

The examiner relies on the following references:

Cullick et al. (Cullick)	4,455,860	Jun. 26, 1984
Witkin	4,658,372	Apr. 14, 1987
Zuercher et al. (Zuercher)	5,130,506	Jul. 14, 1992
Orlando et al. (Orlando)	5,141,329	Aug. 25, 1992

Tierney, J.A. "5.5 Use of the Second Derivative" and "5.6 Further use of the Second Derivative-Concavity and Points of Inflection" sections in Calculus and Analytic Geometry, Second Edition, pp. 179-185 (Boston, Allyn and Bacon, Inc. 1972)

Additionally, the examiner relies on admitted prior art [APA] depicted in appellants' Figures 1 and 2.

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Claims 1-6 and 8 stand rejected under 35 U.S.C. § 103 as unpatentable over either one of Zuercher or APA in view of any one of Tierney, Cullick, Witkin or Orlando.

Reference is made to the briefs and answer for the respective positions of appellants and the examiner.

OPINION

We REVERSE.

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 invention. Such reason must stem from some teachings, suggestions or implications 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.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); 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

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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 and the relative persuasiveness of the arguments. 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).

In the instant case, the examiner cites either one of Zuercher or APA for a showing of the prior art method of testing switches via a plot of resistance force versus movement but admits that neither discloses, discusses or suggests taking the second derivative of the plot. Appellants do not disagree.

However, in order to provide for the deficiency of the primary references in not providing for taking the second derivative, the examiner cites any one of four secondary references, each mentioning a second derivative, for the proposition that this is a “well known technique for monitoring plotted data.” The examiner concludes that it would have been “obvious” to apply the use of such a standard technique to determine inflections to the graphed data in Zuercher or APA “since it is known that such derivatives can be used to monitor changes in the relationship between variables and thus would have been of obvious interest” [answer-page 5].

We disagree. Clearly, testing switches via a plot of resistance force versus movement was known. This much is admitted by appellants in the background of their disclosure. But the invention is in the alleged discovery by appellants that by taking the second derivative of this plot and investigating spikes in the second derivative plot, a good test of the tactile feel of the switch movement to an operator can be had.

Now the examiner comes along and, despite the fact that not one of the applied secondary references is directed, in any way, to the testing of switches, holds that the bare knowledge of secondary derivatives applied to monitored plotted data for whatever reason would have made it obvious to the artisan to have taken the second derivative of the plot in either Zuercher or APA.

We fail to find anything in the evidence of record, other than appellants' own disclosure, that would have led the artisan to modify either Zuercher or APA in such a manner as to take the second derivative of the plots therein. Merely because technique B was known in other environments and also process A was known, this would not have made it obvious to apply technique B to process A without some direction or suggestion in the prior art that there would have been some advantage or some expectation of success in making this modification.

Although we find no motivation for making the alleged modification from any evidence of record, even if, arguendo, the artisan were to apply the second derivative of the plotted function in Zuercher or APA and obtain the resultant plot of the second

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derivative of this function, each of the independent claims requires the final step of “investigating spikes in said second derivative plot.” Clearly, there is no evidence of record in this case that any advantage is to be obtained by such an investigation of spikes in the second derivative plot or that such spikes are indicative of anything relating to switches or the testing thereof.

Since we find that the examiner has failed to establish a prima facie case of obviousness with regard to the instant claimed subject matter, we will not sustain the rejection of claims 1-6 and 8 under 35 U.S.C. § 103.

The examiner’s decision is reversed.

REVERSED

JAMES D. THOMAS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
ERROL A. KRASS)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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