

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID H. TERRY, WILLIAM A. CHRISTENS-BERRY
BRADLEY G. BOONE

Appeal No. 96-0215
Application 07/975,908¹

ON BRIEF

Before KRASS, FLEMING and CARMICHAEL, **Administrative Patent Judges.**

FLEMING, **Administrative Patent Judge.**

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 2 through 5 and 10 through 17. Claims 6 through 9 have been withdrawn from consideration. Claims 1 has been canceled.

¹Application for patent filed November 13, 1992.

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The invention relates to an optical feature extractor for symbolically encoding DNA bases to permit detection of a class of DNA sequences based on their symmetry.

The independent claim 10 is reproduced as follows:

10. An optical feature extraction apparatus for detecting data comprising:

a filter for decoding the data to be detected comprising a plurality of opaque and transparent regions;

a display means for displaying the filter, the displayed filter spatially modulating the light from the display means and creating an intensity distribution of light;

a means for replicating the light intensity distribution received from the display means;

a mask encoded with the data to be classified, the mask receiving and further modulating the light intensity distribution;
and

a means for detecting the further modulated light intensity distribution received from the mask.

The Examiner relies on the following references:

Shelton, Jr.	3,064,519	Nov. 20, 1962
Tsujiuchi et al. (Tsujiuchi)	5,148,502	Sep. 15, 1992

Claims 2 through 5 and 10 through 17 stand rejected under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which Appellants regard as their invention. Claims 10 through 17 stand rejected

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under 35 U.S.C. § 103 as being unpatentable over Shelton, Jr.

Claims 2 through 5 stand rejected under 35 U.S.C. § 103 as being unpatentable over Shelton, Jr. and Tsujiuchi.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the brief and answer for the respective details thereof.

OPINION

We will not sustain the rejection of claims 2 through 5 and 10 through 17 under 35 U.S.C. §§ 103 or 112.

Analysis of 35 U.S.C. § 112, second paragraph, should begin with the determination of whether claims set out and circumscribe a particular area with a reasonable degree of precision and particularity; it is here where definiteness of the language must be analyzed, not in a vacuum, but always in light of teachings of the disclosure as it would be interpreted by one possessing ordinary skill in the art. *In re Johnson*, 558 F.2d 1008, 1015, 194 USPQ 187, 193 (CCPA 1977).

The Examiner argues that the language, "a filter for decoding the data to be detected" in claim 10 is vague and indefinite because it is not clear how a filter performs a function of decoding the data. The Examiner argues that the

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remaining claims are indefinite because they depend from claim 10.

Appellants argue on page 6 that it is clear how the filter functions to decode the data to be detected. Appellants point to the specification, page 5, lines 30-32, which disclose that the filter is designed to extract the features of the data. Appellants argue that in light of the specification, it is clear that the filter decodes the data through feature extraction by spatially modulating light which is directed to a mask encoded with the data to be classified.

In view of the Appellants' arguments and in light of the teaching of Appellants' disclosure as it would be interpreted by one possessing ordinary skill in the art, we find that the language "a filter for decoding the data to be detected" sets out and circumscribes a particular area with a reasonable degree of precision and particularity. Therefore, we will not sustain the rejection on the basis of 35 U.S.C. § 112 second paragraph.

In regard to the 35 U.S.C. § 103 rejection, the Examiner has failed to set forth a **prima facie** case. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express

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teachings or suggestions found in the prior art, or by implications contained in such teachings or suggestions. **In re Sernaker**, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983).

"Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." **Para-Ordnance Mfg. v. SGS Importers Int'l, Inc.**, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), **cert. denied**, 117 S.Ct. 80 (1996) **citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.**, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), **cert. denied**, 469 U.S. 851 (1984).

The Examiner notes on page 4 of the answer that Shelton, Jr. fails to teach the claimed position of the filter and encoded mask as set forth in claim 10. On the same page of the answer, the Examiner states that it would have been obvious to one of ordinary skill in the art to adapt commutativity of projection which is an inherent property in optics to change the positions of different elements in the Shelton's optical feature extraction apparatus. We note that the Examiner did not provide any reason for making this modification or any evidence in the prior art to support the Examiner's conclusion.

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Appellants argue on page 8 of the brief that Appellants disclose on pages 3 and 4 of the specification that the notable feature of their invention is to exchange positions of input scenery and the filter set. The specification further teaches that unlike the prior art which provides a display of the input scene on a monitor for projection onto a set of feature extraction vectors realized as amplitude modulated LCTC devices or lithographically prepared masks, the Appellants' invention provides the filter set as input to the system and correspondingly places the sequence data in the filter plane of the system, relying on the commutativity of projection to allow this role reversal. Appellants argue that the prior art is dealing with providing capabilities for filtering a freely varying input scene while their invention is designed to facilitate flexible queries of a large, but unchanging, database of data, e.g. DNA sequences. Appellants argue that placing the filter bank in the input plane provides a relatively low space-bandwidth product, but can be reconfigured to present a variety of filters in accordance with investigators needs and as indicated by the results of earlier queries. Appellants further state that this configuration allows

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for a hierarchical set of filtering operations and thus retains great flexibility in the types of queries that can be carried out.

The Federal Circuit states that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), *citing In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

We agree that Shelton, Jr. teaches a filter and encoded mask, but the Examiner has failed to show that the prior art suggested the desirability of the Examiner's proposed modification. Furthermore, we cannot find that Appellants' invention is obvious just because the laws of physics allow for the Appellants' invention. This hindsight view is not evidence that those skilled in the art would have reason to make the modification. We are not inclined to dispense with proof by evidence when the proposition at issue is not supported by a teaching in a prior art reference or shown to be common knowledge of unquestionable demonstration. Our reviewing court requires

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this evidence in order to establish a *prima facie* case. *In re Knapp-Monarch Co.*, 296 F.2d 230, 232, 132 USPQ 6, 8 (CCPA 1961); *In re Cofer*, 354 F.2d 664, 668, 148 USPQ 268, 271-72 (CCPA 1966). Furthermore, we find that Tsujiuchi fails to supply this missing teaching. Therefore, we find that the Examiner has failed to establish why one having ordinary skill in the art would have been led to the claimed invention by teachings or suggestions found in the prior art.

We have not sustained the rejection of claims 2 through 5 and 10 through 17 under 35 U.S.C. §§ 103 or 112. Accordingly, the Examiner's decision is reversed.

REVERSED

ERROL A. KRASS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
MICHAEL R. FLEMING)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
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