

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(2) is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GREGORY R. REYES
and JUNGSUH KIM

Appeal No. 94-0120
Application 07/208,512¹

ON BRIEF

Before WINTERS and WILLIAM F. SMITH, Administrative Patent Judges, and
McKELVEY, Senior Administrative Patent Judge.

WILLIAM F. SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 1 through 14, all the claims pending in the application. Claims 1 and 12 are illustrative of the subject matter on appeal and reads as follows:

¹ Application for patent filed June 17, 1988.

1. A method of isolating duplex DNA fragments which are present in a mixture of different-sequence duplex DNA fragments derived from a positive source, but absent from a mixture of different-sequence duplex DNA fragments derived from a negative source, said method comprising:

attaching a double-strand linker to the positive-source fragments, and separately, to the negative-source fragments, by ligating the linker to both strands of said positive-source and negative-source fragments, at both ends of said positive-source and negative-source fragments,

amplifying the number of each linker-carrying fragment in each fragment mixture by successively repeating the steps of (i) denaturing the fragments to produce single fragment strands with linker regions at each strand end, (ii) hybridizing the single strands with a single-strand primer whose sequence is complementary to the linker region at one end of each strand, to form a strand/primer complex, and (iii) converting the strand/primer complexes to double-strand fragments in the presence of polymerase and deoxynucleotides,

denaturing the amplified fragments in the two amplified fragment mixtures and hybridizing the denatured fragments in the two mixtures under conditions in which the linker regions associated with the positive-source strands do not hybridize with the linker regions associated with the negative-source strands, and

selectively isolating DNA species which are not hybridized with DNA fragment strands from the negative source.

12. A method of amplifying a mixture of different sequence duplex DNA fragments, comprising

attaching a double-strand linker to the fragments, by ligating the linkers to both strands of the fragments, at both fragment ends,

denaturing the fragments to produce single fragment strands with linker regions at both strand ends,

hybridizing the single strands with a primer whose sequence is complementary to a linker region on each fragment strand, to form strand/primer complexes,

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converting the strand/primer complexes to double-strand fragments in the presence of polymerase and deoxynucleotides, and

repeating said denaturing, hybridizing, and converting steps until a desired degree of amplification is achieved.

The references relied upon by the examiner are:

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| Mullis et al. (Mullis) | 4,683,195 | July 28, 1987 |
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| Eur. Pat. App. (Van de Sande) | 0 224 126 | June 3, 1987 |
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Maniatis et al. (Maniatis), "Strategies for cDNA Cloning", Molecular Cloning: A Laboratory Manual, 227-28 (1982).

Claims 1 through 14 stand rejected under 35 U.S.C. § 103 as unpatentable over Van de Sande taken with Mullis and Maniatis. We reverse.

DISCUSSION

Appellants state at page 3 of the appeal brief that the claims stand or fall together for the purposes of this appeal. In stating the rejection on pages 2-5 of the examiner's answer, the examiner has rejected the claims as a group and has not applied the teachings of any specific reference to the requirement of any specific claim.

We make this point since it appears that the examiner's consideration of the claims in this application has been limited to claim 1. However, claim 12, another independent claim, is broader than claim 1. This is seen in that the rejection posited by the examiner relies upon Maniatis for its description of so-called "conventional differential hybridization techniques."

See page 3, second full paragraph of the examiner's answer. Claim 1 appears to require method steps that are described by Maniatis. Claim 12 does not.

As so often happens when the examiner fails to address the broadest claim pending in the application but, rather, focuses on a narrower claim, the reasons why the broader claim is unpatentable may be lost. If we were to make an informed guess as to what the examiner's position is regarding the patentability of claim 12, it would be as follows. Claim 12 requires a series of steps which are known to one of ordinary skill in the art as PCR as described in Mullis. However, the method required by claim 12 differs from that described in Mullis in at least two significant aspects, i.e., claim 12 requires the use of a double-strand linker and a primer whose sequence is complementary to a region of that linker. The examiner has pointed to the paragraph bridging columns 16-17 of Mullis as evidence that the reference encompasses the use of a "linker." Mullis does, in fact, describe the use of a linker in that passage. However, that passage does not describe the use of a double-strand linker or the use of a primer which is complementary to a region of the linker. According to the examiner (examiner's answer, pages 2-3), Van de Sande describes the use of a double-strand linker called a splinker.

While the examiner has not separately addressed claim 12, she concluded at page 4 of the examiner's answer that:

[O]ne of ordinary skill in the art would have recognized the application of the added-on priming sequence of Van de Sande et al. to amplification

procedures employing primer extension such as the PCR of Mullis et al. and said one of ordinary skill would have been motivated to use the Van de Sande et al. -type linker and ligate both strands by the obvious facility of providing the required priming sequences for PCR without the requirement for knowing the sequences flanking the template region.

The examiner also stated at page 6 of the examiner's answer in response to an argument that:

[T]he skilled artisan using the PCR regularly in the laboratory would have been thoroughly familiar with the technique and this would have immediately recognized splinkers as a means for adding a known sequence onto a DNA fragment to be amplified by using the added-on sequence as a priming sequence from which to derive a primer.

If the examiner is rejecting claim 12 on the basis of a proposed modification of Mullis based upon the disclosure of Van de Sande only, i.e., Maniatis is not needed to reject claim 12, the examiner has not articulated a coherent fact-based rationale for such a rejection. It has long been held that a conclusion of obviousness must be based upon facts, not generalities. In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968); In re Freed, 425 F.2d 785, 788, 165 USPQ 570, 571 (CCPA 1970). Here, we have only the vaguest intimations from the examiner as to why claim 12 is unpatentable. The lack of a specific, fact-based statement of a rejection of the broadest claim pending in an application under appeal frustrates the purposes of the administrative appeal procedure within the Patent and Trademark Office. By statute, this board functions as a board of review. 35 U.S.C.

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§ 7(b) (“The [board] shall . . . review adverse decisions of examiners upon applications for patents”) Here, the examiner has failed to present a statement of rejection for the broadest claim pending which is susceptible to a meaningful review. It is the examiner’s initial burden to establish reasons of unpatentability. In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). The examiner has failed to do so here. Accordingly, the decision of the examiner is reversed.

REVERSED

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| SHERMAN D. WINTERS |) | |
| Administrative Patent Judge |) | |
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| WILLIAM F. SMITH |) | BOARD OF PATENT |
| Administrative Patent Judge |) | APPEALS AND |
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| FRED E. McKELVEY, Senior |) | |
| Administrative Patent Judge |) | |

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Law Offices of Peter J. Dehlinger
P. O. Box 60850
Palo Alto, CA 94306