

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 33

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte ROBERT HASELKORN,
WILLIAM J. BUIKEMA, and
CHRISTOPHER C. BAUER

Appeal No. 2001-1842
Application No. 08/684,005

HEARD: July 9, 2002

Before WINTERS, SCHEINER, and ADAMS, Administrative Patent Judges.

ADAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 81-85, 87-104 and 106-130¹, which are all the claims pending in the application.

¹ As appellants' state (Brief, page 1), claims 86 and 105 were canceled in an Amendment filed concurrently with the Brief. This amendment was entered. Answer, page 2. Accordingly, claims 87 and 106, which depend from claims 86 and 105 respectively now depend from canceled claims. For the purposes of this appeal we have treated claims 87 and 106 as if they depend from claims 1 and 103 respectively. Upon further prosecution of the claims in this application, we encourage the examiner and appellants to work together to correct this claim dependency issue.

Claim 81 is illustrative of the subject matter on appeal and is reproduced below:

81. A polynucleotide comprising a gene encoding a sucrose synthase polypeptide that comprises the amino acid sequence of SEQ ID NO: 2, said gene operably linked to a heterologous promoter that expresses said gene.

The references relied upon by the examiner are:

Hesse et al. (Hesse) WO 94/28146 Dec. 8, 1994

Christopher C. Bauer (Bauer), Isolation and Characterization of Genes Involved in Nitrogen Fixation and Heterocyst Cytodifferentiation Anabaena sp. strain PCC 7120 (1994) (unpublished dissertation, University of Chicago)

GROUND OF REJECTION

Claims 81, 84, 85, 87-94, 103, 104, 106-110, 116, 119 and 121-125 stands rejected under 35 U.S.C. § 103 as being unpatentable over Bauer.

Claims 82, 83, 95-102, 111-115, 117, 118, 120 and 126-130 stand rejected under 35 U.S.C. § 103 as being unpatentable over Bauer in view of Hesse.

We reverse.

DISCUSSION

Bauer:

According to the examiner (Answer, page 4), "Bauer teaches a gene encoding the Anabaena sp 7120 sucrose synthase gene ... vector and transformed host cells ... including this gene." Bauer, however, "does not insert the Anabaena sp 7120 sucrose synthase gene into an expression vector under the control of a heterologous promoter and express the protein encoded

thereby.” Id. To make up for this deficiency in Bauer, the examiner simply asserts that it is well known in the art to transform and express heterologous genes in a large variety of different host cells. Answer, pages 4-5.

The claimed invention requires, inter alia, that the gene encoding the sucrose synthase polypeptide be operably linked to a heterologous promoter that expresses the gene. According to the examiner, when Bauer is combined with the well known knowledge in the art “it would have been obvious to one of ordinary skill in the art to insert the gene of Bauer into an expression vector and to express the gene in order to produce large quantities of sucrose synthase.”

Upon review of this record, it is our opinion that the examiner failed to evaluate the question of obviousness using the correct legal standard. The examiner may establish a case of prima facie obviousness “only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.” In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). “The factual inquiry whether to combine references must be thorough and searching.” In re Lee, 277 F.3d 1338, 1345, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002), quoting McGinley v. Franklin Sports, Inc., 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001). Moreover, it is improper for this board, and for that matter the examiner, to hold claims unpatentable for obviousness based solely on conclusory statements about what is “common knowledge” or “well known” in the art, without objective evidence in

support of that knowledge. See Lee, 277 F.3d at 1344, 61 USPQ2d at 1434-1435.

Since the examiner failed to provide any objective evidence in support of her assertion that it is well known in the art to transform and express heterologous genes in a large variety of different host cells the rejection cannot be sustained. This is, however, not the only reason why the examiner's position cannot be sustained. According to appellants (Brief, page 3), "Bauer does not provide methods that would enable a person of ordinary skill in the relevant art to successfully isolate the bacterial sucrose synthase gene." In this regard, appellants argue (id.) with reference to In re Vaeck, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991), "[w]hile Bauer discloses a putative amino acid sequence of a very small fragment of the sucrose synthase gene, the reference provides no teaching that would suggest to one of ordinary skill in the art the making of the claimed invention nor a reasonable expectation of success in the endeavor."

According to appellants (Brief, page 6), Bauer found "the two standard techniques that an individual of ordinary skill in the art would use to isolate a complementary gene were wholly unsuccessful," therefore Bauer had to employ a novel method. Appellants note (id.), however, that "[w]hile the [novel] method is disclosed by the reference, Bauer does not teach the sequence of the 200 bp fragment used to isolate the region nor the sequence of the 8kb insert ultimately isolated." Therefore, appellants argue (Brief, bridging paragraph, pages 6-7),

“[a]bsent a disclosure of the sequence of the 200 bp fragment, a person of ordinary skill in the art would not possess the tools necessary to proceed with isolating the entire coding sequence.”

In responding to appellants’ arguments, the examiner steps away from her original ground of rejection, developing a line of reasoning involving the use of restriction enzymes to isolate an “8 kb ClaI fragment of genomic DNA [which] would allow one to eliminate the vast majority of Anabaena sp strain 7120 genomic DNA.” Answer, pages 9-10. According to the examiner (Answer, page 10), “one of ordinary skill in the art could easily use several distinct probes each constructed from a different portion of the disclosed amino acid sequence data to clearly identify the correct 8 kb ClaI fragment as this fragment should hybridize to each of the probes and virtually eliminate any likelihood of a false positive.” The examiner further finds (id.) that “[o]ther alternative methods of isolating the disclosed 8 kb ClaI fragment could also be devised using techniques well known to the skilled artisan at the time of the invention [emphasis added].”

While the examiner’s line of reasoning is appealing on the surface, and may well be theoretically possible, the examiner provides no evidence on this record supporting her position. As set forth, supra, it is improper for the examiner to hold claims unpatentable for obviousness based solely on conclusory statements about what is “common knowledge” or “well known” in the art, without objective evidence in support of that knowledge. See Lee, 277 F.3d at 1344, 61 USPQ2d at 1434-1435.

For the forgoing reasons, it is our opinion that the examiner failed to meet her burden² of establishing a prima facie case of obviousness. Accordingly we reverse the rejection of claims 81, 84, 85, 87-94, 103, 104, 106-110, 116, 119 and 121-125 under 35 U.S.C. § 103 as being unpatentable over Bauer.

Bauer in view of Hesse:

The examiner relies on Hesse (Answer, bridging paragraph, pages 5-6), to “teach the alteration in sugar concentration in plants by the introduction of one or more genes, including sucrose synthase, into the plants ... which cause changes in sucrose concentrations ... [and for] promoters suitable for the expression thereof within the plants.” Hesse, however, fails to make up for the deficiencies in Bauer as discussed supra.

Accordingly, we reverse the rejection of claims 82, 83, 95-102, 111-115, 117, 118, 120 and 126-130 under 35 U.S.C. § 103 as being unpatentable over Bauer in view of Hesse.

² The initial burden of presenting a prima facie case of obviousness rests on the examiner. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

SUMMARY

The rejection of claims 81, 84, 85, 87-94, 103, 104, 106-110, 116, 119 and 121-125 under 35 U.S.C. § 103 as being unpatentable over Bauer is reversed.

The rejection of claims 82, 83, 95-102, 111-115, 117, 118, 120 and 126-130 under 35 U.S.C. § 103 as being unpatentable over Bauer in view of Hesse is reversed.

Upon further prosecution, the examiner and appellants should work together to correct the dependency of claims 87 and 106, which currently depend from canceled claims 86 and 105.

REVERSED

Sherman D. Winters)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
Toni R. Scheiner)	
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