

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 31

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MICHAEL J. DYBAS, CRAIG S. CRIDDLE,
and GREGORY M. TATARA

Appeal No. 1998-0424
Application No. 08/474,539¹

ON BRIEF

Before ROBINSON, SCHEINER, and ADAMS, Administrative Patent Judges.
ROBINSON, 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 1, 2, 4, 6, 7, 9, 11, 12, 14 - 16 and 19 - 23, which are all of the claims

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Claims 1 and 9 are illustrative of the subject matter on appeal and read as follows:

1. In a method of treating an environment of soil or water containing carbon tetrachloride (CT) and resident bacteria and having a neutral pH, the improvement which comprises:

(a) adjusting the soil or water being treated to an alkaline pH which suppresses the resident bacteria in the soil or water;

(b) providing cells of *Pseudomonas* PsKC deposited as ATCC 55595 and mutants thereof possessing the capability of PsKC for degradation of the CT which acts upon the CT at the alkaline pH in the soil or water while maintaining the alkaline pH of step (a) under anaerobic conditions and at a temperature so that the CT is converted to carbon dioxide and a non-volatile fraction end product, wherein the cells are grown in a culture medium containing a carbon source and a nitrogen source to a level prior to being provided in the soil or water, which cells are introduced to the soil or water to provide at least about 10^4 CFU per gram of the soil or water and which cells convert the CT to carbon dioxide and the end product while the resident bacteria are suppressed; and

(c) reversing the pH to a more neutral pH similar to the neutral pH of the soil or water before the pH adjustment of step (a).

9. The method of Claim 1 wherein the *Pseudomonas* PsKC is grown in a synthetic medium containing a carbon source and a nitrogen source and which is low in soluble iron salts to produce the cells which are provided in step (b).

The reference relied upon by the examiner is:

Criddle et al. (Criddle), "Transformation of Carbon Tetrachloride by *Pseudomonas* sp.

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Claims 1, 2, 4, 6, 7, 9, 11, 12, 14 - 16, 19 - 23 stand rejected under 35 U.S.C. § 103(a). As evidence of obviousness, the examiner relies upon Criddle.

We reverse.

BACKGROUND

The applicants describe their invention at page 2 of the specification as being directed to a method for converting halogenated hydrocarbons, such as carbon tetrachloride, in the environment into carbon dioxide and non-volatile products using a Pseudomonas sp. without producing toxic halogenated intermediates. Applicants, further, state that the method may involve modifying a portion of the environment in a manner to permit the conversion by Pseudomonas sp. to occur.

DISCUSSION:

Claim interpretation

Claim 1 is directed to a method of treating an environment of soil or water having a neutral pH which contains carbon tetrachloride and resident bacteria by adjusting the soil or water to an alkaline pH and providing cells of a deposited line of Pseudomonas PsKC or mutants thereof under anaerobic conditions and at a temperature that permits the CT to be converted by the microorganism into carbon dioxide and a non-volatile

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reversed to a more neutral pH similar to the neutral pH of the soil or water before the treatment begun.

The rejection under 35 U.S.C. § 103

Obviousness is a legal conclusion based on the underlying facts. Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966); Continental Can Co. USA, Inc. v. Monsanto Co., 948 F.2d 1264, 1270, 20 USPQ2d 1746, 1750 (Fed. Cir. 1991); Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1566-68, 1 USPQ2d 1593, 1595-97 (Fed. Cir. 1987). Here, the dispositive question is whether those of ordinary skill in this art at the time of the invention would have found the claimed method of treating a neutral environment comprised of soil or water which is contaminated with carbon tetrachloride with the Pseudomonas specie required by the present claims in the manner called for by the claims. We agree with the examiner that the teachings of Criddle are particularly relevant to the presently claimed invention. As the examiner notes Criddle describes the use of a species of Pseudomonas which would reasonable appear to correspond to the microorganism called for by claim 1. Compare page 2 of the Specification. Further, the reference describes the culturing of this microorganism in medium which is enriched with added nutrients and describes the ability of the

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examiner acknowledges that Criddle does not teach the neutralization of the environment back to its natural pH after the organism has degraded the CT or how much of the claimed organism is to be added to the environment. (Answer, page 5).

However the examiner urges that (id.):

[i]t would have been obvious to one of ordinary skill in the art to adjust the amount at which the claimed organism is added so as to obtain the optimum results.

With respect to the neutralization of the environment back to its original state the examiner urges that (Answer, page 8):

the whole purpose of environmental bioremediation is to return a polluted environment to its original status, [thus] it would have been obvious to those of ordinary skill in the art to return the instantly treated environment back to its original status, and that would include its pH.

In rebuttal, appellants do not dispute the examiner's position concerning the amount of microorganism to be added to the environment but do take issue with the examiner's position regarding the return of the pH of the treated environment to a more neutral pH similar to the neutral pH observed prior to the initial adjustment of pH. (Brief, paragraph bridging pages 7-8).

While we would agree that the examiner's position has certain appeal, on closer

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claims. As appellants point out, Criddle “relates to laboratory experiments exclusively.”

(Brief, page 6). The examiner urges that Criddle describes that (Answer, page 4):

[t]he organism was evaluated for its [sic] potential at degrading CT in field applications. At the Moffet [sic] Field groundwater test site, it was found to be inhibited in its breakdown of CT. This inhibition was found to be aggravated when trace metals were added to the groundwater. (Page 3242, col. 2).

However, we find no description of actual field applications of the Pseudomonas of the present claims as alleged. While the reference states at page 3240, column 1, first full paragraph, that “[t]he use of denitrifying organisms would be advantageous for aquifer bioremediation because, unlike oxygen, nitrate and nitrous oxide are highly soluble in water and easily added” we find no explicit direction or suggestion to so employ the claim designated microorganism or methodology which would reasonably correspond to the method of the present claims. At column 2 of page 3242 of Criddle, the reference reasonably appears to describe tests of “groundwater from a shallow aquifer at Moffett Field, Calif.” (Emphasis added). However, again, this is laboratory work on samples removed from the environment. We find no indication in Criddle that the disclosed microorganism was ever applied to an environment of neutral pH which included carbon tetrachloride. Similarly, with regard to the adjustment of the pH of the environment

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level of reasonableness. However, our reviewing appellate court² specifically addressed this question in In re Zurko, 258 F. 3d 1379, 59 USPQ 2d 1693 Slip opinion, decided August 2, 2001, in the following statement, which is paraphrased to reflect the role of the examiner in the fact finding part of the examination process, which emphasizes the importance of facts and evidence on the record to support conclusions of unpatentability to provide a meaningful review of a holding of unpatentability. The court stated:

the deficiencies of the cited references cannot be remedied by . . . general conclusions about what is “basic knowledge” or “common sense” to one of ordinary skill in the art. [The examiner's] assessment of basic knowledge and common sense was not based on any evidence in the record and, therefore, lacks substantial evidence support. . . . With respect to core factual findings in a determination of patentability, however, the [examiner] cannot simply reach conclusions based on his or her own understanding or experience -- or on its assessment of what would be basic knowledge or common sense. Rather, the Examiner must point to some concrete evidence in the record in support of these findings. . . . Accordingly, we cannot accept the [Examiner's] unsupported assessment of the prior art. [footnotes omitted]

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).
On these circumstances, we are constrained to reach the conclusion that the examiner

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obviousness as to the claimed method. Where the examiner fails to establish a prima facie case, the rejection is improper and will be overturned. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir.1988). Therefore the rejection of claims 1, 2, 4, 6, 7, 9, 11, 12, 14, 15, 16, 19 - 23 under 35 U.S.C. § 103 as unpatentable over Criddle is reversed.

SUMMARY

To summarize, the decision of the examiner to reject claims 1, 2, 4, 6, 7, 9, 11, 12, 14, 15, 16, 19 - 23 under 35 U.S.C. § 103 is reversed.

REVERSED

Douglas W. Robinson)
Administrative Patent Judge)
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)
) BOARD OF PATENT
Toni R. Scheiner)
Administrative Patent Judge) APPEALS AND
)
) INTERFERENCES
)
Donald E. Adams)
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