

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte DAVID E. TOWNSEND and CHUN-MING CHEN

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Appeal No. 1999-0111  
Application No. 08/484,593

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ON BRIEF

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Before ELLIS, ROBINSON and MILLS, Administrative Patent Judges.  
ELLIS, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal pursuant to 35 U.S.C. § 134 from the examiner's final rejection of claims 1-3, 6, 7, 9-16, 19, 20, 22-28, 31, 32, 34-39, 42, 43 and 45-53.<sup>1</sup> Claims 4, 5, 8, 17,

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<sup>1</sup> We note the appellants' statement on page 4 of the Reply Brief (Paper No. 19) that the Supplemental Response filed May 7, 1997 [sic] in Paper No. 10 contains an inadvertent error. According to the appellants, claim 29 was to be canceled, not claim 19. Since the examiner does not contest this statement, and because the claim change has no bearing of our disposition of the case, we have listed the claims as indicated by the appellants. Upon return of the application to the corps, the examiner should take the

18, 21, 29, 30, 33, 40, 41, and 44 have been canceled.

Claims 1 and 14 are illustrative of the subject matter on appeal and read as follows:

1. A method for detecting the presence or measuring the concentration of bacteria in a food product, comprising the steps of:

providing a bacterial growth medium formulated for food testing, which comprises a first enzyme substrate for a phosphatase, a second enzyme substrate for a glycosidase, and a third enzyme substrate for a peptidase, wherein said first, second and third enzyme substrates cause or produce an identical type of detectable signal when hydrolyzed by their respective enzymes;

inoculating said medium with said food product and incubating said medium under conditions suitable for bacterial growth for a period of time; and,

detecting or measuring the identical type of detectable signal as an indication of the presence or the concentration of bacteria in said food product.

14. A method for detecting the presence or measuring the concentration of bacteria in a food product, comprising the steps of:

providing a bacterial growth medium formulated for food testing, which comprises a first enzyme substrate for a glycosidase and a second enzyme substrate for a peptidase, wherein said first and second enzyme substrates cause or produce an identical type of detectable signal when hydrolysed by their respective enzymes;

inoculating said medium with said food product and incubating said medium under conditions suitable for bacterial growth for a period of time; and,

detecting or measuring the identical type of detectable signal as an indication of the presence or the concentration of bacteria in said food product.

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appropriate steps to correct the record.

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The references relied upon by the examiner are:

Koumura et al. (Koumura)	4,591,554	May 27, 1986
Carr et al. (Carr)	5,064,756	Nov. 12, 1991
Sussman et al. (Sussman)	5,236,827	Aug. 17, 1993

Claims 1-3, 6, 7, 9-16, 19, 20, 22-28, 31, 32, 34-39, 42, 43 and 45-53 stand rejected under 35 U.S.C. § 103 as unpatentable over Sussman, Carr and Koumura.

We reverse.

#### BACKGROUND AND DISCUSSION

The present invention is directed to (i) a method of detecting the presence of bacteria in a food sample which comprises inoculating a growth medium having a first substrate which is capable of being acted upon by a phosphatase, a second substrate which is capable of being acted upon by a glycosidase, and a third substrate which is capable of being acted upon by a peptidase, with a food product, and (ii) a bacterial growth medium which comprises a first enzyme substrate for a phosphatase, a second enzyme substrate for a glycosidase, and a third enzyme substrate for a peptidase, wherein said enzyme substrates produce a detectable signal when hydrolyzed by their respective enzyme. In addition, the invention is directed to a method of detecting the presence of bacteria in a food sample which comprises inoculating a growth medium having a first substrate which is capable of being acted upon by a glycosidase, and a second substrate which is capable of being acted upon by a peptidase, with a food product.

The examiner has premised his conclusion of obviousness on the teachings of Sussman, Carr and Koumura.

Sussman discloses a method of rapidly identifying specific bacteria species in clinical samples by their enzyme profiles. The method involves the use of a support which "has deposited on it a dry substance selected from a group consisting of fluorogenic substrates,  $\beta$ -methylumbelliferone, 7-amino 4-methyl coumarin,  $\beta$ -naphthylamine, fluorescein, and resorufin." Sussman, col. 4, lines 1-9 and Figures 1 and 2. Sussman discloses that the fluorogenic substrates are dried on individual supports. Id., col. 6, line 31- col. 8, line 11; Figures 1 and 2. Sussman further discloses that

The number of kinetics and fluorescence enhancing supports required to identify a particular microorganism will depend on the microorganism. In some cases, a single support may be enough. In other cases, forty or more different supports may be required to differentiate one microorganism from another having a very similar profile. Id., col. 8, lines 35-41.

Carr discloses a method of determining the sensitivity of a microorganism to an antimicrobial substance wherein the microorganism is cultured in the presence of an antimicrobial substance and a fluorogenic substrate such as 7-N-(aminoacyl)-7-amido-4-methylcoumarin (a peptidase substrate) and 4-methyl umbelliferyl phosphate(a phosphatase substrate). Carr, the abstract; col. 3, line 66- col. 4, line 50.

Koumura discloses a method of detecting microorganisms in food or water which comprises the use of nutrient medium containing the microorganisms and umbelliferone derivatives such as 4-methylumbelliferyl phosphate (a phosphastase substrate) and

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4-methyl umbelliferyl galactoside (a galactosidase substrate). Koumura, the abstract; col. 2, lines 14-44.

According to the examiner,

It would have been obvious to one of ordinary skill in the art at the time the invention was made to test samples of food and water as shown by Koumura with the method of Sussman or Carr because Sussman and Carr teach biological samples in general and the method of Koumura is closely related to the methods of Sussman and Carr and teaches both foods and water as samples [Answer, p. 6].

We disagree.

It is well established that the examiner has the initial burden under § 103 to establish a prima facie case of obviousness. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984). It is the examiner's responsibility to show that some objective teaching or suggestion in the applied prior art, or knowledge generally available [in the art] would have led one of ordinary skill in the art to combine the references to arrive at the claimed invention. Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1629 (Fed. Cir. 1996). This the examiner has not done.

Here, we find that the rejection fails because the examiner has not come to grips with the fact that all of the claims, i.e., both the claims to the methods and to the bacterial growth medium, require the presence of a specific combination of enzyme substrates in said growth medium. Thus, the burden is on the examiner to demonstrate

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that the applied prior art, or knowledge generally available in the art, would have suggested the preparation of a bacterial growth medium which comprises either the enzyme substrates for a glycosidase and a peptidase (e.g., claim 14) or the enzyme substrates for a phosphatase, glycosidase and a peptidase (e.g., claims 1 and 27) to one of ordinary skill in the art. On this record, we only find these suggestions in the appellants' disclosure. Thus, we agree with the appellants that the examiner has engaged in impermissible hindsight in making her determination of obviousness. In re Gorman, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991) ("It is impermissible, however, simply to engage in a hindsight reconstruction of the claimed invention, using the applicant's structure as a template and selecting elements from references to fill the gaps"); Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1138, 227 USPQ 543, 547 (Fed. Cir. 1985); W.L. Gore & Assocs. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) ("To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher").

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We note the examiner's argument that Sussman teaches a technique to identify bacteria which employs the use of six fluorogenic substrates, each with a different fluorescent moiety. Answer, p. 7. However, because Sussman fails to teach the combination of fluorogenic substrates required by the claims, we find this argument unpersuasive.

Accordingly, the rejection is reversed.

REVERSED

JOAN ELLIS	)	
Administrative Patent Judge	)	
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	)	BOARD OF PATENT
DOUGLAS W. ROBINSON	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
DEMETRA J. MILLS	)	
Administrative Patent Judge	)	

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