

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(2) is not binding precedent of the Board.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. 9

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TOMMY G. TAYLOR,
J. DOUGLAS MANSELL,
JOHN P. SHAMBURGER
and MARK E. WOODYEAR

Appeal No. 1997-2265
Application 08/369,207

ON BRIEF

Before PAK, WALTZ and ROBINSON, Administrative Patent Judges.
WALTZ, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal pursuant to 35 U.S.C. § 134 from the
examiner's final rejection of claim 2, which is the only claim
remaining in this application.

According to appellants, the invention is directed to

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reducing the concentration of 1,2-dichloroethane impurity by

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chlorinating a composition comprising chiefly
1,1,1-trichloroethane and a contaminating amount of
1,2-dichloroethane (see claim 2 on appeal and the Brief, pages
2-3). A copy of claim 2 on appeal is reproduced below:

2. A method comprising chlorinating a composition
comprising chiefly 1,1,1-trichloroethane and a
contaminating amount of 1,2-dichloroethane to
reduce the concentration of said 1,2-dichloroethane.

The following references have been cited by the examiner
as

evidence of obviousness:

Bursack et al. (Bursack) 1972	3,658,657	Apr. 25,
Gordon et al. (Gordon) ¹ 1975	3,919,337	Nov. 11,

Claim 2 stands rejected under 35 U.S.C. § 103 as
unpatentable over Bursack in view of Gordon (Answer, page 3).
We reverse this rejection essentially for the reasons set
forth on pages 3-7 of the Brief. We add the following
comments primarily for emphasis.

OPINION

The examiner states that Bursack discloses a process for

¹The examiner has incorrectly listed and discussed this
reference as "Gorden" in the Answer (e.g., Answer, pages 2 and
3).

the separation of 1,1,1-trichloroethane from 1,2-dichloroethane by extractive distillation and therefore "it is known in the art that 1,2-dichloroethane is an undesirable impurity in

1,1,1-trichloroethane." (Answer, page 3). Appellants do not contest this finding but note that Bursack does not disclose the chlorination recited in claim 2 on appeal (Brief, page 3).

The examiner applies Gordon for the disclosure that 1,2-dichloroethane can be reacted with chlorine to produce 1,1,2-trichloroethane (Answer, pages 3 and 5). From these disclosures, the examiner makes the following conclusions:

It would have been obvious to one of ordinary skill in the art to utilize the process of Gordon et al [sic, Gordon] to reduce the amount of 1,2-dichloroethane in the mixture of 1,2-dichloroethane and 1,1,1-trichloroethane of Bursack et al to obtain the instant results of applicants [sic, appellants] because there would have been a reasonable expectation that the 1,2-dichloroethane in the said mixture would react to produce 1,1,2-trichloroethane and thereby reducing the amount of 1,2-dichloroethane present in said mixture.

Gorden et al [sic, Gordon] clearly teaches that 1,2-dichloroethane will react with chlorine. It would have been reasonable to expect this reaction to take place in the presence of other components including 1,1,1-trichloroethane. Therefore, there

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would have been a reasonable expectation by one of ordinary skill in the art that the known mixture of 1,1,1-trichloroethane containing undesirable 1,2-dichloroethane could be reacted with chlorine to reduce the amount of 1,2-dichloroethane.

The motivation to combine the teachings of Bursack et al and Gordon et al [sic, Gordon] . . . is derived from the above mentioned reasonable expectation.

(Answer, pages 3-4, emphasis added).

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The examiner's conclusions are not supported by an appropriate analysis under 35 U.S.C. § 103. Our reviewing court has held:

[w]here claimed subject matter has been rejected as obvious in view of a combination of prior art references, a proper analysis under § 103 requires, inter alia, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success. [Citation omitted]." In re Vaeck, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991).

The examiner's obviousness analysis is deficient since the examiner has only considered one factor, i.e., the reasonable expectation of success. The examiner has "derived" the first factor of motivation/suggestion from the second factor of reasonable expectation of success discussed in Vaeck, supra (see the Answer, page 4). "The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification. [Citations omitted]." In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). The showing of the teaching or motivation to combine

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prior art references must be clear and

particular. In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

On this record, the examiner has failed to establish any convincing reason or suggestion to combine the references as proposed. The examiner has failed to point to convincing evidence of a suggestion from the prior art, the knowledge of one of ordinary skill in the art, or the nature of the problem itself. See In re Dembiczak, supra. The examiner has not explained why one of ordinary skill in the art would have used the process of Gordon, which produces 1,1,2-trichloroethane, in the process of Bursack, which is directed to the production and purification of 1,1,1-trichloroethane. Furthermore, the examiner has not established why one of ordinary skill in the art would have used the chlorination reaction of Gordon to remove 1,2-dichloroethane when Bursack teaches the removal of this impurity by extractive distillation.

Additionally, the examiner has not established that the

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prior art would have revealed a reasonable expectation of success in carrying out the method of appealed claim 2. Although Gordon teaches the chlorination of 1,2-dichloroethane to produce 1,1,2-trichloroethane, this reaction is only accomplished in a liquid reaction medium of a mixture of 1,2-dichloroethane and 1,1,2-trichloroethane (see Gordon, column 1, lines 5-15 and lines 53-56). The process of Bursack produces a reaction product of 1,1,1-trichloroethane contaminated with by-product 1,2-dichloroethane. The examiner has not established, by convincing evidence or reasoning, that the reaction of Gordon would have had a reasonable expectation of success in the presence of 1,1,1-trichloroethane (see the Answer, page 6).

For the foregoing reasons and those set forth in appellants' Brief, we determine that the examiner has not established a prima facie case of obviousness in view of the reference evidence. Accordingly, the rejection of claim 2 under 35 U.S.C. § 103 over Bursack in view of Gordon is reversed.

The decision of the examiner is reversed.

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REVERSED

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CHUNG K. PAK)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
THOMAS A. WALTZ)	
Administrative Patent Judge)	APPEALS AND
)	
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DOUGLAS W. ROBINSON))
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TAW:hh

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