

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GARY G. PODREBARAC

Appeal No. 2001-2151
Application No. 09/035,174

ON BRIEF

Before CAROFF, GARRIS, and NAGUMO, Administrative Patent Judges.
CAROFF, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-7. Claims 8-34 stand withdrawn from consideration by the examiner, pursuant to the provisions of 37 CFR § 1.142(b), as being drawn to non-elected inventions (see Paper Nos. 4 and 8). Appellant's protestations to the contrary notwithstanding, this action by the examiner is a petitionable matter rather than being a matter for consideration on appeal. Accordingly, claims 8-34 are not before us for consideration.

Appellant has elected to prosecute the invention described in section "A" of claim 1 as a species of the generic metathesis process encompassed by the claim. The elected invention relates to the production of propylene from the metathesis of 2-butene and ethylene in a distillation column reactor containing a fixed bed of metathesis catalyst.

Appellant acknowledges on page 4 of his brief that elected claims 1-7 stand or fall together for purposes of this appeal. Accordingly, we focus our attention on section "A" of claim 1 which reads as follows:

(A) the production of propylene from the metathesis of 2-butene and ethylene comprising the steps of:

- (a) feeding a first stream comprising ethylene to a distillation column reactor containing a fixed bed of metathesis catalyst,
- (b) feeding a second stream comprising 2-butene to said distillation column reactor,
- (c) concurrently in said distillation column reactor
 - (i) contacting said 2-butene and said ethylene with said fixed bed metathesis catalyst so as to react at least a portion of said ethylene with at least a portion of said 2-butene to produce propylene and create a reaction mixture containing unreacted 2-butene, unreacted ethylene and propylene product;
 - (ii) separating the unreacted ethylene and propylene product from the unreacted 2-butene by fractional distillation and

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(iii) azeotropically removing water present in said first and second streams

and

(d) removing the unreacted ethylene and propylene product from said distillation column reactor as overheads product[.]

The following references are relied upon by the examiner as representative of the prior art:

Chauvin et al. (Chauvin)	4,795,734	Jan. 3, 1989
Slaugh	5,030,784	Jul. 9, 1991
Palmer et al. (Palmer)	5,235,102	Aug. 10, 1993

The following rejections are before us for consideration:

I. Claims 1-7 stand rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness.

II. Claims 1-7 also stand rejected under 35 U.S.C. § 103 for obviousness over either Slaugh or Chauvin, each taken in view of Palmer.

Based on the record before us, we are compelled to reverse each of the rejections at issue for the following reasons.

With regard to the rejection under 35 U.S.C. § 112, the examiner opines that there is no antecedent basis in the claim for "azeotropically removing water present in said first and second streams" because, according to the examiner, appellant does not affirmatively claim the presence of water in any of the

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two feeds. As we construe the claim, according to the plain meaning of its terms, there is no need for any antecedent basis for water being present in the two recited feed streams since an affirmative recitation of that feature is included in the azeotropic removal step itself. In other words, the claim requires, as a mandatory step, that water be azeotropically removed in the distillation column reactor and that the water to be removed is "present in said first and second streams."

For the foregoing reason, the 35 U.S.C. § 112 rejection is reversed.

Consistent with our holding above, we find that none of the cited prior art references teach or suggest the azeotropic removal of water in a metathesis distillation column reactor which is fed by a first stream of ethylene and a second stream of 2-butene, where each stream contains water. If anything, Chauvin (col. 3, ll. 15-20) evidences that in the prior art it was preferable to conduct the metathesis reaction in question in the absence of moisture by using reactant streams which have been pre-dried.

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Thus, whether or not it would have been prima facie obvious to conduct the subject metathesis reaction in a distillation column reactor, the prior art provides no motivation to do so under conditions where water is present in the feed streams and is azeotropically removed in the column.

For the foregoing reasons, the decision of the examiner is reversed as to each of the rejections before us.

REVERSED

MARC L. CAROFF)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
BRADLEY R. GARRIS)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
)	
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MARK NAGUMO)	
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