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. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

_____

Ex parte KRISTINA A. KREUTZER
and
WILSON TAM

_____

Appeal No. 2001-0597
Application No. 08/564,513

_____

ON BRIEF

_____

Before WILLIAM F. SMITH, WALTZ, and POTEATE, ***Administrative Patent Judges***.

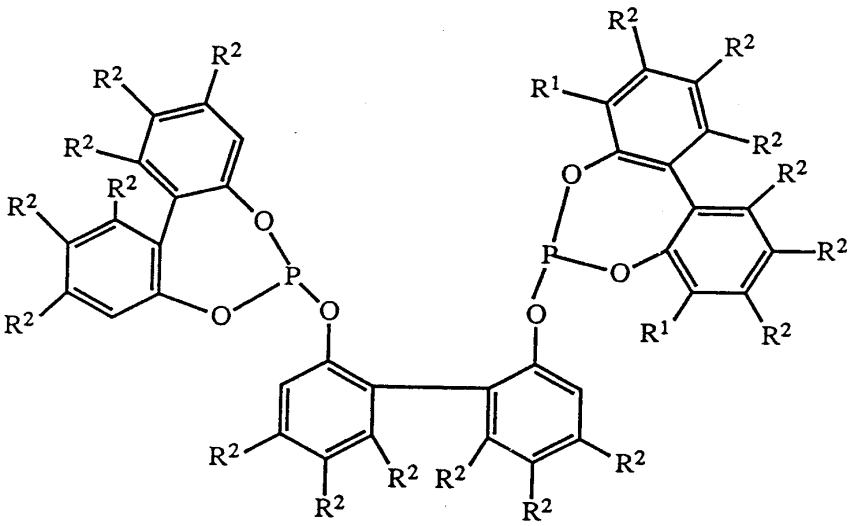
POTEATE, ***Administrative Patent Judge***.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 10-15 and 20-21, which are all of the claims pending in the application.

Claims 10 and 20 are representative of the subject matter on appeal and are reproduced below:

10. A catalyst precursor composition comprising zero-valent nickel and a bidentate phosphite ligand of Formula I



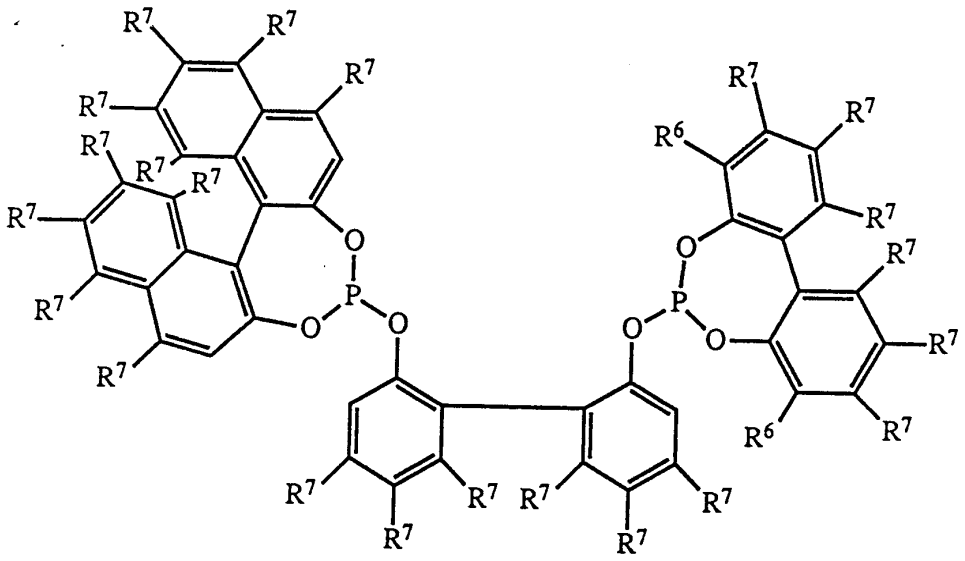
Formula I

wherein:

each R^1 is independently a secondary or tertiary substituted hydrocarbyl of 3 to 12 carbon atoms; and

each R^2 is independently, H, X wherein X is Cl, F or Br, a C_1 to C_{12} alkyl, or OR^3 wherein R^3 is C_1 to C_{12} alkyl.

20. A catalyst precursor composition comprising zero-valent nickel and a bidentate phosphite ligand selected from the group consisting of Formulas II-VI as set forth below:

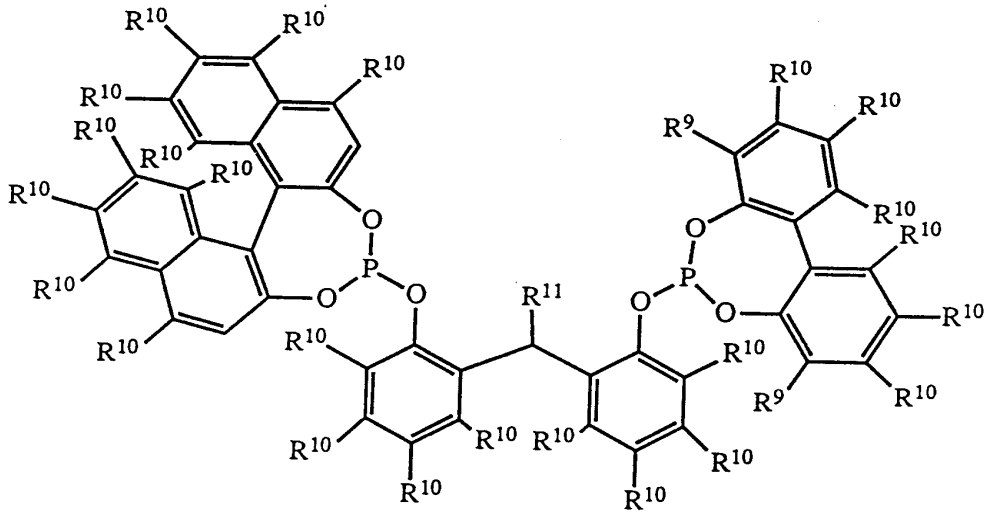


Formula II

wherein

each R^6 is independently a secondary or tertiary substituted hydrocarbyl of 3 to 12 carbon atoms; and

each R^7 is independently H, X wherein X is Cl, F or Br, a C_1 to C_{12} alkyl, or OR^8 wherein R^8 is C_1 to C_{12} alkyl;



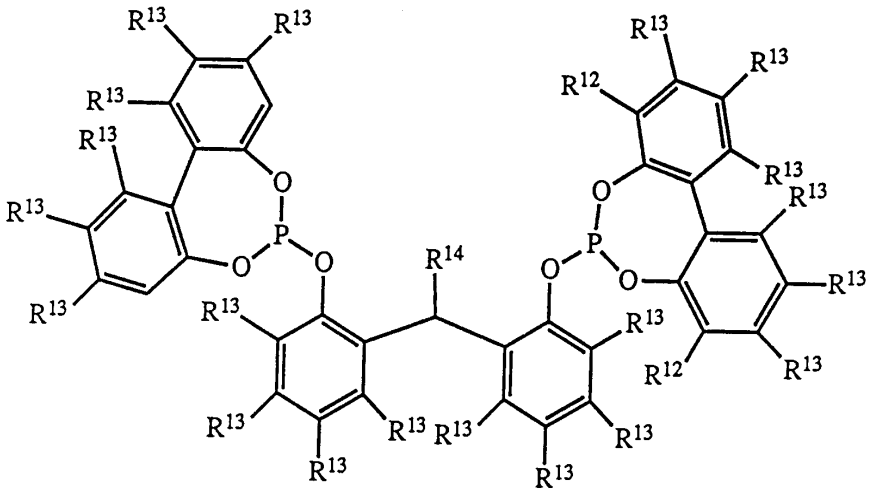
Formula III

wherein

each R^9 is independently a secondary or tertiary substituted hydrocarbyl of 3 to 12 carbon atoms;

each R^{10} is independently H, X wherein X is Cl, F or Br, a C_1 to C_{12} alkyl, or OR^8 wherein R^8 is C_1 to C_{12} alkyl; and

each R^{11} is independently a branched or straight chain alkyl of up to 12 carbon atoms;



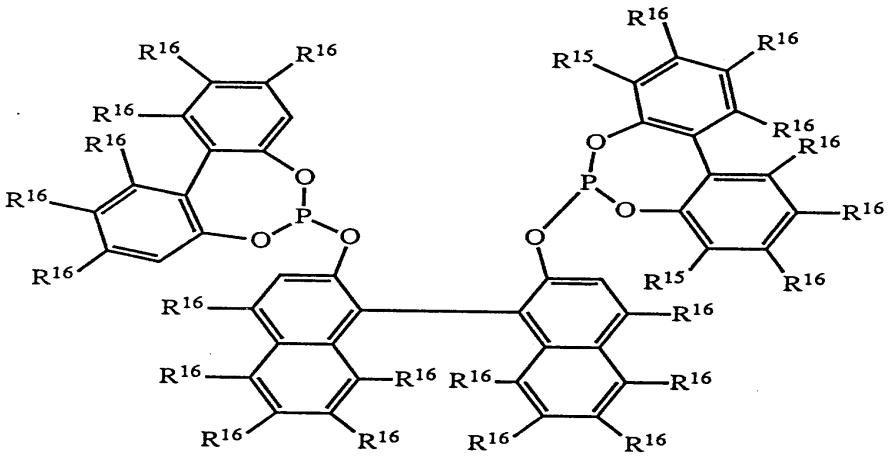
Formula IV

wherein

each R^{12} is independently a secondary or tertiary substituted hydrocarbyl of 3 to 12 carbon atoms;

each R^{13} is independently H, X is wherein X is Cl, F or Br, a C_1 to C_{12} alkyl, or OR^8 wherein R^8 is C_1 to C_{12} alkyl; and

each R^{14} is independently a branched or straight chain alkyl of up to 12 carbon atoms;



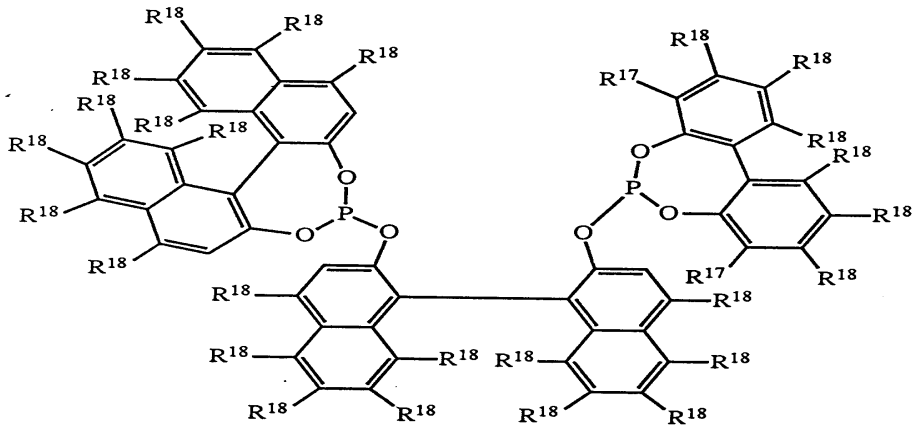
Formula V

wherein,

each R^{15} is independently a secondary or tertiary substituted hydrocarbyl of 3 to 12 carbon atoms; and

each R^{16} is independently H, X wherein X is Cl, F or Br, a C_1 to C_{12} alkyl, or OR^8 wherein R^8 is C_1 to C_{12} alkyl;

and



Formula VI

wherein

each R^{17} is independently a secondary or tertiary substituted hydrocarbyl of 3 to 12 carbon atoms; and

each R^{18} is independently H, X wherein X is Cl, F or Br, a C_1 to C_{12} alkyl, or OR^8 wherein R^8 is C_1 to C_{12} alkyl.

The references relied upon by the examiner are:

Billig et al. (Billig) 4,668,651 May 26, 1987

Baker, Michael J. et al. (Baker I), "Chelating Diphosphite Complexes of Nickel(0) and Platinum(0): Their Remarkable Stability and Hydrocyanation Activity," ***J. Chem. Soc., Chem. Commun.***, No. 12 (1991), pp. 803-04.

Baker, Michael J. Et al. (Baker II), "Chiral Aryl Diphosphites: a New Class of Ligands for Hydrocyanation Catalysis," ***J. Chem. Soc., Chem. Commun.,*** (1991), pp. 1292-93.

GROUND OF REJECTION

Claims 10-15, 20 and 21 stand rejected under 35 U.S.C. § 103 as unpatentable over Billig in view of Baker I and Baker II.[1]

We reverse.

DISCUSSION

The invention is directed to a catalyst precursor composition which is useful in hydrocyanation reactions involving unactivated monoolefins. Appeal Brief, Paper No. 10, received June 18, 1997, page 2. The catalyst precursor compositions comprise a zero-valent nickel and a bidentate phosphite ligand according to Formulas I (claims 10-15) and II-VI (claims 20-21). These ligands are all unsymmetrical and substituted. See ***id.***, page 4.

[1] The rejection of claims 10-15 and 20-21 under 35 U.S.C. § 103 as unpatentable over Abatjoglou in view of Baker I and Baker II has been withdrawn. Examiner's Answer, Paper No. 11, mailed October 2, 1997, page 5, last paragraph.

The examiner relies on Billig for a teaching of catalyst compositions comprising nickel and substituted/unsubstituted bidentate phosphite ligands which are structurally similar to the claimed ligands. Examiner's Answer, page 4. Billig discloses bidentate phosphite ligands which are both symmetrical and unsymmetrical (***id.***, page 6) for use in hydroformylation processes (Billig, column 1, lines 7-11). According to the examiner,

> [t]he difference between the catalyst compositions of the prior art and the catalyst compositions instantly claimed is that of generic description. The indiscriminate selection of "some" among "many" is prima facie obvious. The motivation to make the claimed catalyst precursor compositions derives from the expectation that structurally similar compositions would possess similar activity (ie., as a catalyst precursor composition).

Examiner's Answer, pages 4-5.

The examiner appears to acknowledge that Billig does not specifically teach a catalyst composition comprising a ***zero valent*** nickel. However, the examiner maintains that one of ordinary skill in the art would have been motivated to prepare Billig's catalyst precursor compositions using zero-valent nickel

in view of the teachings of Baker I and II. Examiner's Answer, page 5. The examiner relies on Baker I and II for a teaching of catalyst compositions comprising a zero valent nickel and an unsubstituted bidentate phosphite ligand. ***Id.*** The Baker I and II catalyst precursor compositions are structurally similar to those of Billig. ***Id.***, page 8. The examiner further notes that Baker II teaches that chelating aryl diphosphite complexes are useful in both hydrocyanation and hydroformylation processes. ***Id.***

> Appellants maintain that
>
> there is no suggestion (i.e., no incentive or motivation) in any of the[] references that the generically disclosed unsubstituted symmetrical bidentate phosphite ligands of the primary reference[] . . . should or could be modified or specifically used with zero valent nickel to result in the Appellants' specifically claimed catalyst precursor compositions.

Appeal Brief, page 4. With respect to Billig, appellants note that the reference is directed to hydroformylation, not hydrocyanation, processes. ***Id.***, page 6. With respect to Baker I and II, appellants urge that the ligand species disclosed therein have a formula which is not encompassed by the claimed ligands. ***Id.*** Appellants point out that Baker I and II teach the

effectiveness of catalyst precursor compositions comprising zero valent nickel in connection with hydrocyanation reactions (but not hydroformylation reactions) involving activated olefins, while appellants' catalyst precursor compositions are useful in the hydrocyanation of unactivated monoolefins. See ***id.***

In order to establish a ***prima facie*** case of obviousness, the examiner must identify a suggestion or motivation to modify the teachings of the cited references to achieve the claimed invention. ***In re Kotzab***, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000). The suggestion or motivation to modify a reference may be implicit from the prior art as a whole rather than expressly stated. ***Id.*** However, regardless of whether the examiner relies on an express or implicit showing, he must provide reasons for finding a limitation to be taught or suggested in the reference. ***Id.*** "[P]articular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected the[] components for combination in the manner claimed." ***Id.,*** 217 F.3d at 1371, 55 USPQ2d at 1317.

In the present case, the examiner has simply failed to identify the requisite suggestion or motivation to utilize ***zero valent*** nickel in formulating Billig's catalyst precursor compositions to achieve the claimed catalyst precursor compositions. The record establishes that Billig discloses ligands having a generic formula which includes two different subgeneric formulas encompassing, respectively, the Baker I and II ligands and the presently claimed ligands. The record further includes findings that Billig teaches complexing "nickel" with the generic group of ligands to form catalyst precursor compositions useful in ***hydroformylation*** processes (see column 3, lines 50-54) and that Baker I and II disclose the effectiveness of complexing their subgeneric group of ligands with ***zero valent*** nickel in conjunction with ***hydrocyanation*** processes. However, the record does not include any findings which establish why one of ordinary skill in the art would have been motivated to complex ***zero valent*** nickel with the presently claimed subgeneric group of ligands for use as catalyst precursor compositions in Billig's ***hydroformylation*** processes in view of Baker I and II, or that

Billig's use of the term "nickel" encompasses, or would render obvious, the use of ***zero valent*** nickel.

Accordingly, we conclude that the examiner has failed to establish a ***prima facie*** case of obviousness and the rejection is reversed.[2]

[2] As evidence of nonobviousness, appellants reference related Patent Application Serial No. 08/424,351, filed April 26, 1995 (Appeal Brief, page 6) as well as pages from a book by J.P. Collman, ***Principles and Applications of Organotransition Metal Chemistry*** (1987) (Appeal Brief, page 7). Appellants are reminded that 37 CFR § 1.195 provides that exhibits submitted after a case has been appealed will not be admitted without a showing of good and sufficient reasons why they were not earlier presented. In this regard, we note that the examiner was not required to consider the evidence submitted with appellants' brief. In any event, having found that the examiner has failed to establish a ***prima facie*** case of obviousness, we need not consider appellants' evidence. ***See In re Fine***, 837 F.2d 1071, 1076, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988).

REVERSED

WILLIAM F. SMITH Administrative Patent Judge	)	
THOMAS A. WALTZ Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
LINDA R. POTEATE Administrative Patent Judge	)	

LRP:psb

E.I. Du Pont De Nemours and Company
Legal Patent Records Center
Barley Mill Plaza 25/1128
4417 Lancaster Pike
Wilmington, DE 19805