The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 41

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte VOLKER DOLLE, MARTIN ANTBERG, JURGEN ROHRMANN, WALTER SPALECK, and ANDREAS WINTER

_____

Appeal No. 1999-1418
Application No. 08/418,847

_____

ON BRIEF

_____

Before KIMLIN, GARRIS, and JEFFREY T. SMITH, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal which involves claims 5, 6, 11-16 and 23-26 which are all of the claims remaining in the application.

The subject matter on appeal relates to a process for the preparation of a polyolefin which includes the use of a metallocene catalyst having a mono- or di- substituted

ethylene bridge. This appealed subject matter is adequately illustrated by independent claims 5, 6, 23 and 25, a copy of which taken from the appellants' brief is appended to this decision.

The reference set forth below is relied upon by the examiner as evidence of obviousness:

Winter et al. (Winter) 5,416,178 May 16, 1995
(effective filing date Aug. 4, 1988)

Claims 23 and 24 are rejected under the first paragraph of 35 U.S.C. § 112 "because there is no support in the specification for the metallocene of these claims" (answer, page 3).

All of the claims on appeal are rejected under 35 U.S.C. § 103 as being unpatentable over Winter.

These appealed claims have been separately grouped and argued by the appellants as indicated on page 5 of the brief. Accordingly, in our assessment of the above noted rejections, we have appropriately considered each of these separately grouped and argued claims.

OPINION

Having carefully considered the argument and evidence advanced by the appellants and by the examiner on this appeal,

we determine that only the section 103 rejection of claims 5, 6 and 11-16 should be sustained.

Concerning the section 112 rejection, the examiner urges that "[t]he bridge 'ethylene-ethylene' would appear to refer to a bridge of the structure '-$(CH_2)_{4-}$' which is not a species of the metallocenes of Formula (I) on page 2 of the specification" (answer, page 3). However, we cannot agree with the manner in which the examiner has interpreted the claim 23 phrase "ethylene-ethylene" since this interpretation plainly is inconsistent with the appellants' specification disclosure. In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983). Instead, we agree with the appellants' basic position that one with ordinary skill in the art would interpret this claimed phrase consistent with the specification disclosure (e.g., see Example 29 and compare Example 8 of the specification) as referring to "ethyl-ethylene." As so interpreted, appealed claims 23 and 24 indisputably define a metallocene which is supported, that is disclosed, in the subject specification. It follows that we

cannot sustain the examiner's section 112, first paragraph, rejection of these claims.[1]

As for the section 103 rejection, we fully share the view expressed in the answer and in the prior Board decision on Appeal No. 93-2412 for parent application Serial No. 07/569,179 that the Winter reference establishes a prima facie case of obviousness with respect to the here claimed subject matter notwithstanding the appellants' opposing viewpoint. See, for example, Merck & Co. v. Biocraft Labs., Inc., 874 F.2d 804, 807, 10 USPQ2d 1843, 1846 (Fed. Cir. 1989).

As rebuttal evidence of nonobviousness, the appellants proffer the showings in their specification and in the Dolle declarations executed February 24, 1995 and September 8, 1995.

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[1] According to 37 CFR § 1.75(d)(1), application claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning and terms in the claims may be ascertainable by reference to the description. Therefore, upon return of this application to the examiner's jurisdiction, the examiner should consider objecting to the claim 23 phrase "ethylene-ethylene" as failing to conform with the language of the subject specification and correspondingly should require the appellants to change the claimed phrase "ethylene-ethylene" to the specification phrase "ethyl-ethylene" so as to eliminate the aforementioned nonconformity.

Therefore, we must now retrace our assessment of the obviousness issue before us giving due consideration to the appellants' evidence of nonobviousness in conjunction with the examiner's reference evidence of obviousness. In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

In his answer, the examiner has conceded, in essence, that these showings establish unexpected results with regard to the inventive metallocenes tested in comparison with the closest prior art metallocene of Winter. As correctly urged by the examiner, however, the inventive metallocenes tested in the showings are limited to only those having certain ethylene-bridged substitutions involving methyl, ethyl and phenyl groups. Thus, we share the examiner's position that the proffered showings are considerably more narrow in scope than the appellants' argued independent claims 5 and 6.

Evidence presented to rebut a prima facie case of obviousness must be commensurate in scope with the claims to which it pertains, and such evidence which is considerably more narrow in scope than the claimed subject matter is not sufficient to rebut a prima facie case. In re Dill, 604 F.2d 1356, 1361, 202 USPQ 805, 808 (CCPA 1979). Because the appellants' showing is considerably more narrow than their

independent claims 5 and 6 as explained above, the evidence of nonobviousness cannot be considered to outweigh the reference evidence of obviousness. It follows that we will sustain the examiner's section 103 rejection based on Winter of independent claims 5 and 6 and of claims 11-16 which depend therefrom.

We reach a different conclusion with respect to appealed claims 23 and 24. It is the examiner's viewpoint that the appellants' showings do not evince nonobviousness with respect to these claims because the showings do not relate to the "-$(CH_2)_4$-" species to which the examiner interprets these claims as being directed. We have previously explained, however, that the examiner's claim interpretation is inappropriate and that these claims as properly interpreted are directed to the appellants' "ethyl-ethylene" embodiment. This last mentioned embodiment unquestionably is tested in the appellants' showing and has yielded results which the examiner has indicated are unexpected. Under these circumstances, we ultimately conclude that the appellants' evidence of nonobviousness outweighs the examiner's reference evidence of obviousness with respect to appealed claims 23 and 24 as interpreted by this panel of the Board. It follows that we cannot sustain the examiner's

section 103 rejection of these claims as being unpatentable over Winter.

We also cannot sustain the examiner's section 103 rejection of appealed claims 25 and 26 as being unpatentable over Winter. These claims are directed to the appellants' racemic 1, 2-diphenyl-ethylene-bis-(1-indenyl) zirconium dichloride embodiment, and this embodiment concededly has been shown by the appellants to exhibit unexpected results (e.g., see specification Examples 9 and 10 as well as the Dolle declaration executed September 8, 1995). Nevertheless, the examiner regards these showings as more narrow and thus not persuasive of nonobviousness with respect to claims 25 and 26 because "[t]here is no evidence that similar results would be obtained when using different concentrations of metallocenes and/or aluminoxanes, different aluminum/zirconium ratios, different polymerization temperatures and different olefin monomers" (answer, page 8).

However, the examiner has provided no evidentiary support for his concern that the metallocene embodiment under consideration would not yield unexpected results if the above noted parameters were altered. On the other hand, the appellants' showings reveal that this embodiment displays

unexpected results under a variety of parameter conditions including some of those listed by the examiner such as differing metallocene concentrations and differing olefin monomers (again see specification Examples 9 and 10 in conjunction with the Dolle declaration executed September 8, 1995). These circumstances lead us to conclude that the evidence before us on this appeal for and against obviousness, on balance, weighs most heavily in favor of a nonobviousness conclusion with respect to appealed claims 25 and 26.

In summary, we have sustained the examiner's section 103 rejection of claims 5, 6 and 11-16 but not his section 103 rejection of claims 23-26. We also have not sustained the examiner's 112, first paragraph, rejection of claims 23 and 24.

The decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

Edward C. Kimlin Administrative Patent Judge	)	
Bradley R. Garris Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
Jeffrey T. Smith Administrative Patent Judge	)	

BRG:tdl

Appeal No. 1999-1418
Application No. 08/418,847

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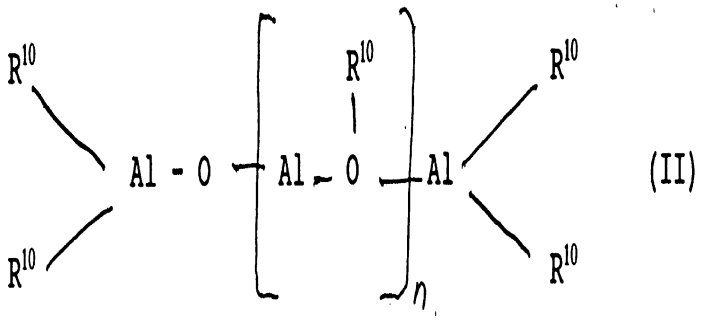
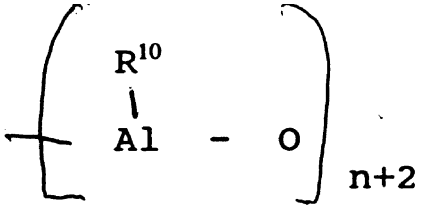
APPENDIX

5. A process for the preparation of a polyolefin by polymerization of an olefin of the formula R^{11}-CH=CH-R^{12}, in which R^{11} and R^{12} are identical or different and are a hydrogen atom or a C_1-C_{14}-alkyl radical, at a temperature of 0°C to 150°C, under a pressure of 0.5 to 100 bar, in solution, in suspension or in the gas phase and in the present of a catalyst which consists essentially of a metallocene and an aluminoxane of the formula (II)



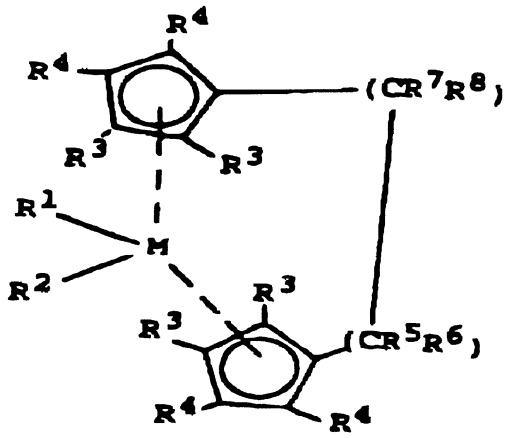
(II)

for the linear type, and/or of the formula (III)



(III)

for the cyclic type, in which, in the formulae (II) and (III), R^{10} is a C_1-C_6-alkyl group and n is an integer from 2 to 50, wherein the metallocene is at least one compound of the formula (I)



(I)

in which

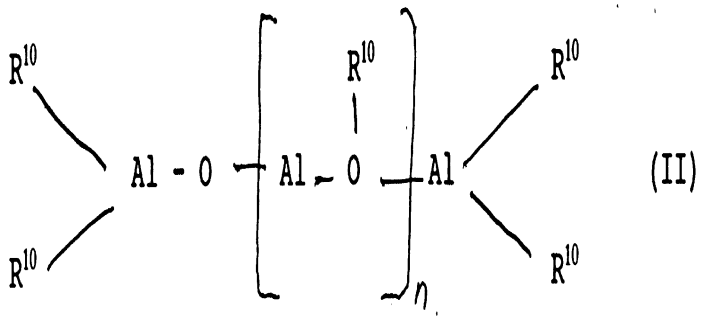
M	is zirconium or hafnium,
R^1 and R^2 are identical or different and a	are identical or different and are a hydrogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-alkoxy group, a C_6-C_{10}-aryl group, a C_6-C_{10}-aryloxy group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_7-C_{40}-alkylaryl group, a C_8-C_{40}-arylalkenyl group or a halogen atom,
R^3 and R^4 are identical or different and are a hydrogen atom, a halogen atom, a C_1-C_{10}-alkyl group or a $-NR^9_2$, SR^9, $-OR^9$, $-OSir^9_3$, $-Sir^9_3$ or $-PR^9_2$ radical, in which R^9 is a C_1-C_{10}-alkyl group, a C_6-C_{10}-aryl group or, in the case of radicals containing Si or P, also a halogen atom,	

or in each case two adjacent radicals R^3 or R^4, together with the carbon atoms joining them, form a ring,

R^5, R^6 and R^7 are a hydrogen atom and

R^8 is a phenyl, benzyl, methyl, ethyl, trifluoromethyl or methoxy group.

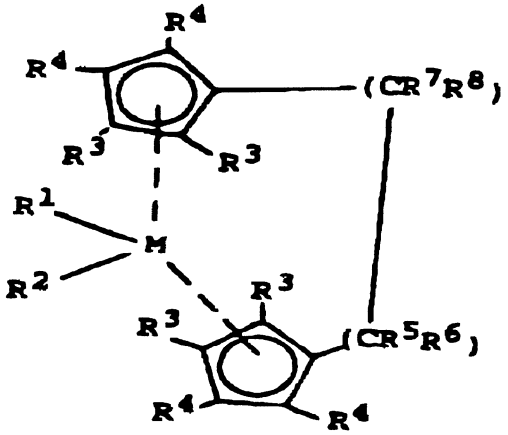
6. A process for the preparation of a polyolefin by polymerization of an olefin of the formula R^{11}-CH=CH-R^{12}, in which R^{11} and R^{12} are identical or different and are a hydrogen atom or a C_1-C_{14}-alkyl radical, at a temperature of 0°C to 150°C, under a pressure of 0.5 to 100 bar, in solution, in suspension or in the gas phase and in the present of a catalyst which consists essentially of a metallocene and an aluminoxane of the formula (II)



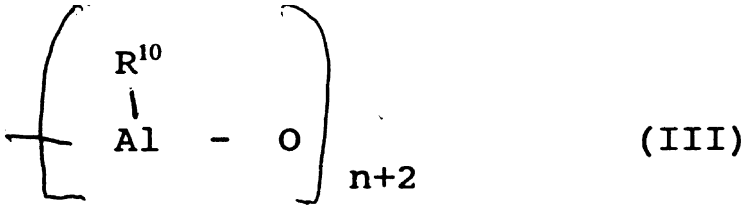
(II)

for the linear type, and/or of the formula (III)

for the cyclic type, in which, in the formulae (II) and (III), R^{10} is a C_1-C_6-alkyl group and n is an integer from 2 to 50, wherein the metallocene is at least one compound of the formula (I)



(I)



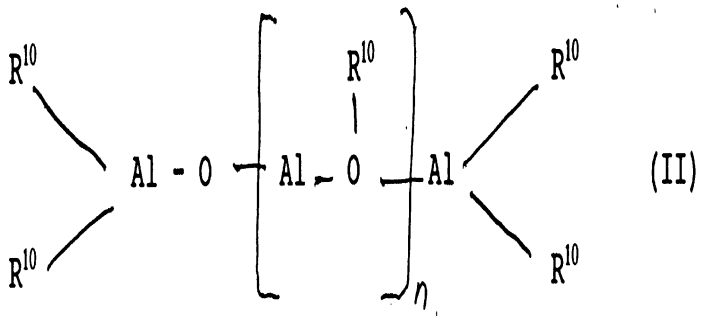
(III)

in which

M is zirconium or hafnium,

R^1 and R^2 are identical or different and are a hydrogen atom, a C_1-C_{10}-alkyl group, a C_1-C_{10}-alkoxy group, a C_6-C_{10}-aryl group, a C_6-C_{10}-aryloxy group, a C_2-C_{10}-alkenyl group, a C_7-C_{40}-arylalkyl group, a C_7-C_{40}-alkylaryl group, a C_8-C_{40}-arylalkenyl group or a halogen atom,

R^3 and R^4 are identical or different and are a hydrogen atom, a halogen atom, a C_1-C_{10}-alkyl group or a $-NR^9_2$, SR^9, $-OR^9$, $-OSir^9_3$, $-Sir^9_3$ or $-PR^9_2$ radical, in which R^9 is a C_1-C_{10}-alkyl group, a C_6-C_{10}-aryl group or, in the case of the radicals containing Si or P, also a halogen atom, or in each case two adjacent radicals R^3 or R^4, together with the carbon atoms joining them, form a ring,



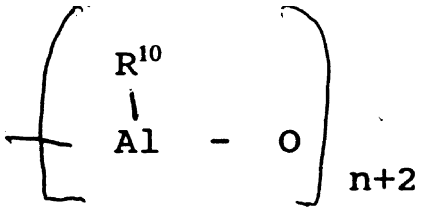
(II)

R^5 and R^7 are a hydrogen atom and

R^6 and R^8 are identical or different and are a phenyl, benzyl, methyl, ethyl, trifluoromethyl or methoxy group.

23. A process for the preparation of a polyolefin by polymerization of an olefin of the formula R^{11}-CH=CH-R^{12}, in which R^{11} and R^{12} are identical or different and are a hydrogen atom or a C_1-C_{14}-alkyl radical, at a temperature of 0°C to 150°C, under a pressure of 0.5 to 100 bar, in solution, in suspension or in the gas phase and in the present of a catalyst which consists essentially of a metallocene and an aluminoxane of the formula (II)

for the linear type, and/or of the formula (III)

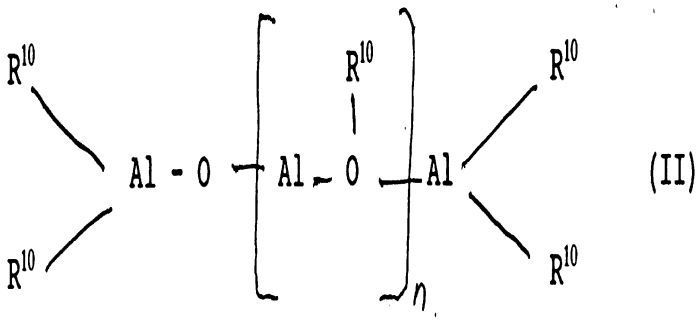


(III)

for the cyclic type, in which, in the formulae (II) and (III), R^{10} is a C_1-C_6-alkyl group and n is an integer from 2 to 50, wherein the metallocene is wherein said metallocene is ethylene-ethylene(indenyl)$_2$ zirconium dichloride.

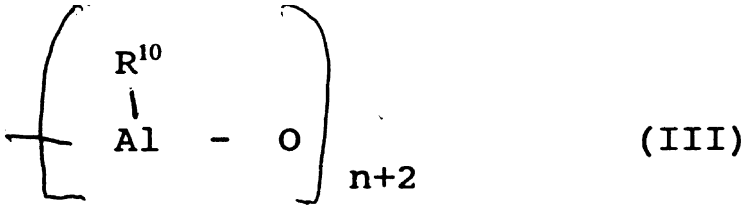
25. A process for the preparation of a polyolefin by polymerization of an olefin of the formula R^{11}-CH=CH-R^{12}, in which R^{11} and R^{12} are identical or different and are a hydrogen atom or a C_1-C_{14}-alkyl radical, at a temperature of 0°C to 150°C,

under a pressure of 0.5 to 100 bar, in solution, in suspension or in the gas phase and in the present of a catalyst which consists essentially of a metallocene and an aluminoxane of the formula (II)



(II)

for the linear type, and/or of the formula (III)



(III)

for the cyclic type, in which, in the formulae (II) and (III), R^{10} is a C_1-C_6-alkyl group and n is an integer from 2 to 50,

wherein said metallocene is racemic 1,2-diphenyl-ethylene-bis (1-indenyl) zirconium dichloride.