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559 F.2d 595

United States Court of Customs and Patent Appeals.

Application of John Paul
HOGAN and Robert L. Banks.

Patent Appeal No. 76-641.

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July 28, 1977.

Patent applicant appealed from decision of the Board of Appeals, Serial No. 181,185, affirming examiner's rejection of various claims of patent application for solid polymers of olefins. The Court of Customs and Patent Appeals, Markey, Chief Judge, held that: (1) in view of filing of continuous applications certain claims were entitled to benefit of filing date of earliest application; (2) ancestral applications must be considered in determining propriety of rejection under statute relating to making of enabling disclosures in specifications; (3) where application was entitled to benefit of earlier filing date, a later state of art could not be improperly employed to determine application's compliance with statute on specification content, and (4) to be entitled to benefit of earlier filing date there must have been a continuous chain of copending applications satisfying statutory requirement on specifications.

Modified and remanded.

Miller, J., filed an opinion concurring in part.

Attorneys and Law Firms

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Joseph F. Nakamura, Washington, D. C., for the Commissioner of Patents, Fred E. McKelvey, Washington, D. C., of counsel.

Before MARKEY, Chief Judge, and RICH, BALDWIN, LANE and MILLER, Judges.

Opinion

MARKEY, Chief Judge.

This appeal is from the decision of the Patent and Trademark Office (PTO) Board of Appeals affirming various rejections, under 35 U.S.C. ss 102, 103, 112 (first paragraph), and 132, of claims 13-15 in appellants' application No. 181,185 filed September 16, 1971 (the 1971 application) for "Solid Polymers of Olefins."¹ A main issue involves use of a "later state of the art" as evidence to support a rejection.

The 1971 application is said to be a continuation of application No. 648,364 filed June 23, 1967 (the 1967 application), in turn a "divisional" of application No. 558,530 filed January 11, 1956 (the 1956 application)². The 1956 application is a continuation-in-part of application No. 476,306 filed December 20, 1954 and application No. 333,576 filed January 27, 1953 (the 1953 application).

We affirm in part, reverse in part, and remand with respect to certain rejections.

The Claims

Although the 1971 application discloses several polymers, the claims are limited:³

13. A normally solid homopolymer of 4-methyl-1-pentene.⁴

*598 14. A polymer of claim 13 having a melting point in the range of 390 to 425° F.

15. A polymer of claim 13 which is wax-like and thermally stable as evidenced by substantially no decomposition at temperatures below about 700° F. as shown by Figure 5.⁵

The Disclosures

Appellants assert that, under the provisions of 35 U.S.C. s 120,⁶ claims 13 and 15 are entitled to the benefit of the filing date of the 1953 application and claim 14 is entitled to the benefit of the filing date of the 1956 application.

The 1953 application discloses solid polymers made from 1-olefin monomers having a maximum chain length of eight carbon atoms and no branching nearer the double bond than the 4-position. Several olefin monomers which form such

polymers are disclosed: ethylene, propylene, 1-butene, 1-pentene, 1-hexene, and 4-methyl-1-pentene.

A method of making such polymers using a catalyst containing chromium oxide on a silica-alumina support is described. The application includes twenty "examples" and twenty-five "tables" giving detailed information on: how to prepare, activate, use, and regenerate the catalyst; how to influence the molecular weight of the polymer products; what solvents or diluents to use in admixture with the olefin feed; what feed velocities, reaction pressures, reaction temperatures, and reaction times are operative; and certain physical and chemical characteristics of the polymer products.

Example I in the 1953 application includes this statement, which we designate as (A):

(A)

4-Methyl-1-pentene gave tough, solid polymer which, however, was successfully expelled from the reactor in continuous-flow operation.

Example XVI refers to Figure 2 in the drawings, which is a graph showing thermal depolymerization curves for five polyolefin polymers and commercial polyisobutylene. Example XVI includes this statement, which we designate as (B):

(B)

Whereas the former (commercial polyisobutylene) began to decompose at about 600o F, the latter (polymers of propylene, 1-butene, 1-pentene, 1-hexene, and 4-methyl-1-pentene) began to decompose at about 700-725o F.

Example XIX describes polymerizing 4-methyl-1-pentene "over chromia-alumina-silica catalyst" and states: "The 4-methyl-1-pentene polymer is a tough solid polymer suitable for a substitute for natural waxes."

The 1956 application is a continuation-in-part application and as filed contains most, but not all, of the information found in the 1953 application. Missing from the 1956 application as filed are statement (B) and the graph of Figure 2. Included in the 1956 application are the following new statements not present in the 1953 application, which we designate as (C) and (D):

(C)

We have produced crystalline polymers of 4-methyl-1-pentene which have melting points in the range of 390 to 425o F.

(D)

1-Butene and 4-methyl-1-pentene can be polymerized in substantially the same manner as previously described and produce crystalline polymers. One sample of *599 4-methyl-1-pentene polymer thus obtained had a melting point of 394o to 421o F. A second similar polymer of 4-methyl-1-pentene produced in the same general manner had a melting point of 410 to 420o F.

The 1967 application, according to appellants' brief before the board, contains all of the disclosures relating to polymers of 4-methyl-1-pentene contained in the 1953 and 1956 applications. The 1971 application on appeal contains statements (A) and (B), the Figure 2 graph (now Figure 5), and statements (C) and (D).

The following table summarizes the disclosures:

Fig. 2

Application (filing date)	Statement (A)	Statement (B)	(now Statement Fig. 5)	Statement (C)	Statement (D)
1-27-53	yes	yes	yes	no	no
1-11-56	yes	no	no	yes	yes
6-23-67	yes	yes	yes	yes	yes
9-16-71	yes	yes	yes	yes	yes

References

Haven	3,257,367	June 21, 1966 (filed June 23, 1955)
Edwards	3,299,022	January 17, 1967 (filed April 4, 1962)
Edwards	3,317,500	May 2, 1967 (filed October 2, 1963)

The references relied upon by the examiner and board were:

Natta et al., Rendiconti dell'Accademia Nazionale dei Lincei, Series VIII, Vol. XIX, No. 6 (December 1955), pp. 397-403.

Haven discloses a solid poly-4-methyl-1-pentene which is described as crystalline and, when oriented as a fiber, shows a melting point of 235° C. (455° F.).

Edwards ('022) describes a solid, amorphous, elastomeric homopolymer of 4-methyl-1-pentene. The patent states that a 1,4-type linkage⁷ is almost exclusive, being over 95% of the repeating linkages in the homopolymer of 4-methyl-1-pentene, when polymerization using an aluminum chloride catalyst is conducted at temperatures below -60° C. The patent further states that "(i)t has been thought possible heretofore to obtain polymerization of olefins only through (1,2-type linkage)" and that a "structural copolymer" is obtained which contains structural units of the 1,2-type linkage as well as of the 1,4-type linkage, when polymerization is conducted at a higher temperature.

Edwards ('500) discloses a 1,4-type polymer of 4-methyl-1-pentene in a cross-linked form having a molecular weight in excess of 1,000,000.

Natta et al. (Natta) discloses a poly-4-methyl-1-pentene which is crystalline and which has a melting point of 205° C. (401° F.) as determined by X-ray examination.

Rejections

The following rejections were affirmed by the board:

(1) Claims 13-15 under 35 U.S.C. s 112, first paragraph,⁸ as "based on a non-enabling disclosure."

(2) Claim 14 under 35 U.S.C. s 112, first paragraph, as "based on a disclosure which does not teach how to prepare polymers having the claimed melting point range" of 390 to 425° F.

*600 (3) Claim 14 under 35 U.S.C. s 132 as "containing new matter in the combination of 'homopolymer' and the melting point range of 390° to 425° F."

(4) Claims 13-15 under 35 U.S.C. s 102 as "fully met by Natta et al." (Natta).

(5) Claims 13 and 15 under 35 U.S.C. s 102 as "fully met by Haven."

(6) Claim 14 under 35 U.S.C. s 103 as "unpatentable over Haven."

The Examiner's Answer

(1) With respect to the rejection of claims 13-15 under 35 U.S.C. s 112, first paragraph, as based on a non-enabling disclosure, the examiner stated:

This rejection is premised on the fact that while the claims are generic in nature, applicants have, at best, only described a very limited species within the generic class. It is believed that the scope of the enablement provided by this specification is not commensurate with the scope of the protection sought. *In re Moore*, (58 CCPA 1042, 439 F.2d 1232,)169 USPQ 236 ((1971)).

* * * The disclosure * * * is non-enabling on how to prepare other species of this polymer such as those of Natta et al, Haven, Edwards (022) and Edwards (500) which, as far as this record is concerned, could not be prepared with the supported chromium oxide catalyst.

* * * The point is * * * that the claims are much broader than the polymers actually prepared in that about the only thing they have in common is that all are normally solid.

(2) With respect to the rejection of claim 14 under 35 U.S.C. s 112, first paragraph, as based on a disclosure which does not teach how to prepare polymers having the claimed melting point range of 390 to 425o F., the examiner stated that "(c)laim 14 reads on a single 'species' of polymer which begins to melt at 390o F and is completely melted at 425o F or on any species that melt within this range." The examiner stated further that this rejection followed from a prior board decision (not of record) involving the 1967 application which held that the disclosure was non-enabling on how to make "a species" which had a melting point "of 410 to 420o F" (found in statement (D)). The examiner reasoned that the specification must also be non-enabling for "the only other 'species' which discloses a melting point, i.e., '394 to 421o F' " (found in statement (D)), and, therefore, "(i)f the only disclosure of polymers having certain melting points is non-enabling, the raw disclosure of polymers having even broader melting points could not possibly be enabling," referring apparently to statement (C).

(3) With respect to the rejection of claim 14 under 35 U.S.C. s 132 as containing new matter in the combination of "homopolymer"⁹ with the melting point range of 390o to 425o F., the examiner explained that the only support for the temperature range appears in statement (C) and that the support for "homopolymers" presumably is derived from statement (D), but that the combination of these two limitations was created by amendment and, therefore, constituted new matter.

(4) With respect to the rejection of claims 13-15 under 35 U.S.C. s 102 as fully met by Natta, the examiner stated that appellants "agree" that the 4-methyl-1-pentene polymer of Natta "anticipates these claims" and that the "only issue" is whether Natta is "prior art to these claims."

Regarding claim 13, the examiner said that Natta is "a statutory bar" because nowhere in the 1971, 1967, or 1956 applications was there "an enabling disclosure" under 35 U.S.C. s 112, first paragraph, for the reasons cited above with respect to rejection (1). The examiner did not mention the 1953 application.

On claim 14, the examiner said that Natta "is prior art" for the reasons given for claim 13, for the additional reasons cited above with respect to rejections (2) and (3), *601 and further because appellants' affidavit under 37 CFR 1.131 (Rule 131) "does not establish reduction to practice of this claim prior to December, 1955," which is Natta's publication date.

Regarding claim 15, the examiner said that Natta "is prior art" for the reasons given for claim 13 and that Natta is "a statutory bar" because the claimed subject matter is not disclosed in the 1956 application (i. e., statement (B) and the graph (now Figure 5) are not in that application).

(5) With respect to the rejection of claims 13 and 15 under 35 U.S.C. s 102 as fully met by Haven, the examiner stated that "(t)he Haven poly(4-methyl-1-pentene) would inherently possess the thermal stability properties of claim 15 in view of its high melting point" and that Haven is "a statutory bar to these claims" for the reasons given for Natta, above.

(6) With respect to the rejection of claim 14 under 35 U.S.C. s 103 as unpatentable over Haven, the examiner stated that the oriented fiber of Haven having a melting point of 235o C. (455o F.) would be expected to have a higher melting point than the unoriented polymer of appellants and, therefore, the range of 390 to 425o F. recited in claim 14 would have been obvious. The examiner said Haven is "prior art" on this claim for the reasons given for Natta, above. The examiner also said that appellants' Rule 131 affidavit does not antedate Haven because the affidavit "does not establish reduction to practice or even conception of the generic range 390-425o F."

The Board

The board affirmed the rejections "for reasons essentially as given by the Examiner" which the board adopted as its own. The board then proceeded to add certain "comments for emphasis."

The board said that statement (C) "stands alone as a statement apparently unconnected with the preceding or following disclosure," and that "(i)t gives no clue as to how a polymer of 4-methyl-1-pentene having the recited range of melting points is to be prepared * * *." The board concluded that "(t)he disclosure is clearly non-enabling with respect to a teaching requisite to inform the artisan of how to make the claimed polymer."

The board further stated that the disclosure "is restricted to a teaching of how to make crystalline polymers," but that the

claims are “not limited to a crystalline polymer of 4-methyl-1-pentene” but “encompasses an amorphous polymer as well, which is manifestly outside the scope of the enabling teaching present in the case.”

The sole references to appellants' earlier applications, and to their Rule 131 affidavit, were contained in this paragraph:

Inasmuch as we sustain the Examiner's rejections under 35 U.S.C. 112 and 132, appellants are palpably not entitled to the benefit of the filing dates of their parent cases which have essentially the same relevant disclosure as present herein; the Natta et al. article and Haven patent are thus statutory bars and an affidavit under Rule 131 becomes inappropriate. Consequently, we affirm the rejections of the appealed claims under 35 U.S.C. 102 as fully met by Natta et al. or Haven and do not reach nor decide the adequacy of the Rule 131 affidavit.

Appellants' Contentions

Appellants contend that the board committed “serious error” in affirming the rejection of claims 13-15 under 35 U.S.C. s 112, first paragraph, as based on a non-enabling disclosure. Appellants argue that the board failed to recognize the “pioneer” status¹⁰ of appellants' invention and that the adequacy of their application should be judged by the state of the art as of its filing date. Relying upon 35 U.S.C. s 120, *602 appellants assert the benefit of their January 27, 1953 filing date for claims 13 and 15 and their January 11, 1956 filing date for claim 14.

Appellants argue that the board erred in affirming the rejection of claim 14 under 35 U.S.C. s 112, first paragraph, because their disclosure leaves “no doubt” as to how to make the polymers recited in claim 14. Appellants refer to statement (C), statement (D), and to examples which give specific conditions suitable for making polymers of 4-methyl-1-pentene, and argue that s 112 does not require a specification to contain a specific working example in order to be enabling.

With respect to the rejection of claim 14 under 35 U.S.C. s 132 as containing new matter, appellants state that the board affirmed this rejection for the reasons given by

the examiner, to wit, that the specification as originally filed does not support the combination of “homopolymer” with the recited melting point range because statement (C) includes copolymers and limiting that melting point range to homopolymers is “new matter.” Appellants argue that the examiner and the board have considered statement (C) completely out of context with the rest of the specification.

Finally, appellants contend that claims 13 and 15 are entitled to the benefit of the filing date of the 1953 application which is prior to Natta and Haven, that claim 14 is entitled to the filing date of the 1956 application, which is less than one year subsequent to Natta and to the effective date of Haven, and that appellants' affidavit under Rule 131 shows prior completion of the invention of claim 14. Thus, appellants contend that claims 13 and 15 are free of the rejections under 35 U.S.C. s 102 by virtue of the 1953 filing date and that claim 14 is free of rejections under 35 U.S.C. ss 102 and 103 because the Rule 131 affidavit removes Natta and Haven. Because the board declined to consider the adequacy of appellants' Rule 131 affidavit, appellants request that the case be remanded to the board for consideration of the affidavit if this court reverses the rejections under 35 U.S.C. ss 112 and 132.

The Solicitor

The solicitor supports the examiner and the board and further argues that appellants' claims cover a genus of homopolymers of 4-methyl-1-pentene, including both low and high molecular weight homopolymers; that “at best” appellants teach how to make only low molecular weight homopolymers; that it is possible in view of Natta, Haven, Edwards ('022), and Edwards ('500) to produce homopolymers having high molecular weights; and, therefore, “the enabling disclosure in the specification is not commensurate in scope with the breadth of the claims.” The solicitor points out that appellants' Rule 131 affidavit shows that they possessed certain molecular weight data (showing a molecular weight of 1,800 for a polymer of 4-methyl-1-pentene) prior to the filing date of their 1956 application, yet such data were not included in that application. Furthermore, the solicitor points to Edwards ('500) which discloses homopolymers of 4-methyl-1-pentene having molecular weights greater than 1,000,000. Thus, the solicitor contends that the examiner and the board made out a prima facie case that appellants' enabling disclosure is not commensurate in scope with the claims.

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