

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARK MILLER, SCOTT D. COOPER,
MARK LELAND and AIKO HANYU

Appeal 2008-5255
Application 11/003,269
Technology Center 1700

Decided: September 22, 2008

Before EDWARD C. KIMLIN, ADRIENE LEPIANE HANLON, and
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

HANLON, *Administrative Patent Judge*.

DECISION ON APPEAL

A. STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134 from an Examiner's final rejection of claims 2-8, 21, and 24-27. Claims 15-20 are also pending in the application but have been withdrawn from consideration. We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM.

The Examiner finally rejected claims 2-8 and 24-27 under 35 U.S.C. § 112, first paragraph, based on the enablement requirement. Final 2.¹

The Examiner finally rejected claims 2-14, 21, and 24-27 under 35 U.S.C. § 102(b) as anticipated by Fina.² Final 3-4.

B. ISSUES

Have the Appellants shown that the Examiner reversibly erred in rejecting claims 2-8 and 24-27 under 35 U.S.C. § 112, first paragraph, based on the enablement requirement.

Have the Appellants shown that the Examiner reversibly erred in rejecting claims 2-8, 21, and 24-27 under 35 U.S.C. § 102(b) as anticipated by Fina.³

C. FINDINGS OF FACT

The following findings of fact (FF) are supported by a preponderance of the evidence. Additional findings of fact as necessary appear in the Analysis portion of the opinion.

1. Appellants' Specification

1. The Appellants disclose a polymer laminate including at least one substrate, and attached thereto, a layer of polymer film. The polymer used to prepare the polymer film may be a metallocene catalyzed isotactic polypropylene or polypropylene copolymer. Spec., para. [0008].

¹ Final Office Action mailed January 24, 2007.

² EP 1 243 612 A2 published September 25, 2002 (“Fina”).

³ In the Final Office Action and the Examiner’s Answer, the Examiner indicated that claims 9-14 are also rejected under 35 U.S.C. § 102(b). Claims 9-14 are not pending in the application. Therefore, the Examiner’s inclusion of claims 9-14 in the statement of the rejection is a harmless error.

2. The isotactic polypropylene copolymers may be prepared by polymerizing a mixed feed of ethylene and propylene in the presence of a metallocene catalyst. The copolymers may have a total ethylene content of from about 0 percent to about 9.5 percent. When the ethylene content is 0, the polymer is a polypropylene and not a copolymer of ethylene and propylene. Spec., para. [0010].
3. The metallocene catalyzed isotactic polypropylene or polypropylene copolymers may be used to produce films that have novel surface properties including good heat seal strength, relatively low melting points, and good tack seal strength. Spec., para. [0015].
4. The isotactic polypropylene or polypropylene copolymers have a melting point of from about 95°C to about 150°C. In one embodiment, the metallocene catalyzed isotactic polypropylene or polypropylene copolymers have a melting point of from about 105°C to about 140°C. Spec., para. [0015].
5. The polymers also have a melt flow index of from about 1 to about 50 grams per 10 minutes as determined using ASTM-D1238. Spec., para. [0015].
6. Additionally, the Appellants disclose a multiple-layer polymer film including at least one substrate polymer, and attached thereto, a layer of metallocene catalyzed isotactic polypropylene or polypropylene copolymer film. The multiple-layer films are capable of being printed. The good print qualities of the multiple-layer films result from the fact that metallocene catalyzed isotactic polypropylene or polypropylene copolymer film has novel surface properties. Spec., para. [0011].

7. These properties include retaining good heat seal properties after being subjected to a corona discharge treatment. Spec., paras. [0011], [0014].
8. The Appellants also disclose that the sealing properties of a corona treated film may be even better than the sealing properties of an untreated film. Spec., para. [0012].
9. According to the Appellants, any method of corona treatment known to be useful to those of ordinary skill in the art may be used with the present invention. Spec., para. [0012].
10. In Example 1, a random copolymer of propylene and ethylene prepared using a metallocene catalyst was used to prepare a film. The polymer was reported to have an ethylene content of 4.7% and is commercially available as TOTAL PETROCHEMICALS EOD01-05. The film was subjected to a corona treatment. Spec., para. [0019].
11. The copolymer was also reported to have a melting point of about 119°C and a nominal melt index of 9g/10 minutes. The film, both treated and untreated, was tested for heat seal properties. Spec., para. [0020].
12. According to Figure 1, the film subjected to a corona treatment had a maximum heat seal force of about 2.5 N/cm at a temperature of about 100°C. Spec., para. [0025].⁴

⁴ Figures 1 and 3 and paragraph [0027] of the Specification report seal force values in “N/cm” and paragraph [0025] of the Specification reports seal force values in “N/cc.” It appears that the unit of measurement for the seal force values reported in paragraph [0025] should be “N/cm.”

13. According to Figure 1, the film that was not subjected to a corona treatment had a maximum heat seal force of about 2.7 N/cm at a temperature of about 104°C. Spec., para. [0025].

2. Claimed subject matter

Claims 24, 25, and 26 are the independent claims involved in this appeal. They read as follows:

24. A multiple-layer polymer film comprising a first layer comprising at least one metallocene catalyzed isotactic polypropylene or polypropylene copolymer film and attached thereto a second layer comprising a polymer film, wherein the multiple-layer polymer film achieves a maximum seal force at a temperature of less than about 105°C upon corona treatment.

25. A multiple-layer polymer film comprising a first layer comprising at least one metallocene catalyzed isotactic polypropylene or polypropylene copolymer film and attached thereto a second layer comprising a polymer film, wherein the multiple-layer polymer film achieves a maximum seal force at a temperature of less than about 105°C and wherein the first layer comprises a melting point of from about 105°C to about 140°C.

26. A multiple-layer polymer film comprising a first layer comprising at least one metallocene catalyzed isotactic polypropylene or polypropylene copolymer film and attached thereto a second layer comprising a polymer film, wherein the multiple-layer polymer film achieves a maximum seal force upon corona treatment that is within 10% of a maximum seal force prior to corona treatment.

App. Br. 8,⁵ Claims Appendix.

3. Fina

14. The invention disclosed in Fina relates to heat-seal films formed from polypropylene copolymers. Fina, para. [0001].

⁵ Appeal Brief dated August 16, 2007.

15. Fina discloses that the heat-seal films comprise a layer of film formed from a metallocene-catalyzed isotactic random copolymer of propylene and at least one other C₂ to C₈ alpha olefin, which can include ethylene and butene. Fina, para. [0007].
16. In one embodiment, ethylene is the preferred C₂ to C₈ alpha olefin comonomer. In such cases, the ethylene content will typically be from about 0.5% to about 15% by weight of copolymer, with from about 1% to about 10% by weight being more typical, and from about 1% to about 8% by weight being still more typical. Fina, para. [0025].
17. In most applications, the heat-seal films are used as layers in multi-layer films. Typically, the heat-seal films will form at least one surface layer joined to a core layer or layers of the multi-layer films. The core layer will typically be formed from a suitable polymer. Fina, para. [0030].
18. Fina discloses that the metallocene-catalyzed random copolymers have certain properties that make them beneficial for use in heat-seal film applications. For example, the copolymers exhibit differential scanning calorimeter (DSC) melting points of less than 150°C, with from about 90°C to about 135°C being obtainable. Fina, para. [0034], *see also id.*, para. [0007].
19. Table 1 lists the basic resin characteristics for three metallocene-catalyzed isotactic propylene-ethylene random copolymer (mRCP) products. Fina, para. [0043].
20. The three mRCP products are identified as Products 2, 3, and 4. Fina, Table 1.

21. Product 2 has an ethylene content of 1.9 weight percent, a melting point of 136.7°C, and a melt flow rate of 14g/10 min. Fina, Table 1.
22. Product 3 has an ethylene content of 2.8 weight percent, a melting point of 130.4°C, and a melt flow rate of 8g/10 min. Fina, Table 1.
23. Product 4 has an ethylene content of 3.5 weight percent, a melting point of 125.0°C, and a melt flow rate of 7g/10 min. Fina, Table 1.

D. PRINCIPLES OF LAW

“To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently.” *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). In chemical compounds, a single prior art species within a claimed genus anticipates the claimed genus. *Atlas Powder Co. v. IRECO Inc.*, 190 F.3d 1342, 1346 (Fed. Cir. 1999); *In re Slayter*, 276 F.2d 408, 411 (CCPA 1960).

A compound and all of its properties are inseparable. *In re Papesch*, 315 F.2d 381, 391 (CCPA 1963).

The specification of a patent application must enable a person skilled in the art to make and use the claimed invention. 35 U.S.C. § 112; *In re Wands*, 858 F.2d 731, 735 (Fed. Cir. 1988). In particular, the specification must teach those of skill in the art “how to make and how to use the invention as broadly as it is claimed.” *In re Vaeck*, 947 F.2d 488, 496 (Fed. Cir. 1991).

The specification, when filed, must also enable one skilled in the art to make and use the invention without undue experimentation. Factors to be considered in determining whether a disclosure would require undue experimentation include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of

working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims. *Wands* 858 F.2d at 737.

Catalytic behavior is generally recognized as being unpredictable. *In re Grant*, 304 F.2d 676, 680 (CCPA 1962).

E. ANALYSIS

1. Rejection based on enablement

The Examiner concluded that the Appellants' Specification does not enable one of ordinary skill in the art to make an invention commensurate in scope with the claims on appeal. In particular, the Examiner found that the examples in the Appellants' Specification are directed to a specific commercially available propylene resin whereas the claims are drawn to any "metallocene catalyzed isotactic polypropylene or polypropylene copolymer." Ans. 3.⁶ Weighing the factors identified in *Wands*, 858 F.2d at 737, the Examiner found that undue experimentation would be required *to make* a metallocene catalyzed isotactic polypropylene or polypropylene copolymer within the scope of the claims on appeal. Ans. 4-6.

In response, the Appellants argue that "it would not require undue experimentation for one skilled in the art to determine what films meet the requirements of the pending claims." App. Br. 3; Reply Br. 2.⁷

To the extent that the Appellants' argument may be true, the argument does not address the issue on appeal, namely, whether the Appellants'

⁶ Examiner's Answer mailed January 11, 2008.

⁷ Reply Brief dated March 10, 2008.

Specification enables one skilled in the art *to make the claimed invention* without undue experimentation.

Based on the record before us, we find the Examiner's factual findings in support of the rejection based on enablement to be reasonable. The Appellants have failed to direct us to any evidence establishing otherwise. Thus, the Appellants have failed to show that the Examiner reversibly erred in rejecting claims 2-8 and 24-27 under 35 U.S.C. § 112, first paragraph, based on the enablement requirement.⁸

2. Rejection based on anticipation

The Examiner found that Fina discloses a multi-layered biaxially oriented film comprising at least one surface or skin layer joined to a core layer. The Examiner found that the skin layer comprises a metallocene-catalyzed isotactic polypropylene copolymer having a melting point below 150°C and a seal initiation temperature from 80°C to 125°C. The Examiner found that the skin layer comprises 1 to 8 weight percent of ethylene. Ans. 3-4.

The Examiner did not find that the film disclosed in Fina is subjected to a corona treatment. Nonetheless, the Examiner found that the film disclosed in Fina is compositionally identical to the claimed film, and thus, inherently has the claimed corona treatment properties. Ans. 3-4.

The Appellants argue that Fina does not necessarily teach a maximum seal force at a temperature of less than 105°C, and in fact, discloses

⁸ Claim 21 recites: “The multiple-layer polymer film of Claim 24, wherein the multiple-layer polymer film is a label.” App. Br. 8, Claims Appendix. Claim 21 does not further limit the composition of the film. Therefore, it is not clear on this record why claim 21 has not also been rejected under 35 U.S.C. § 112, first paragraph, based on the enablement requirement. *See* 37 C.F.R. § 1.75(c) (2007).

maximum seal force temperatures significantly greater than 105°C. The Appellants refer to Fina paragraph 35 and Fina Figures 3A and 3B for support. App. Br. 4.

The portions of Fina relied on by the Appellants do not relate to “seal force.” Rather, Fina Figures 3A and 3B show the “seal strength” of several resins. *See also* Fina, para. [0035] (disclosing that “heat-seal strength” is often measured in terms of “hot-tack” performance. Fina, para. [0035].

According to the Appellants’ Specification, “seal force” and “seal strength” are not the same. *Compare* Spec., paras. [0020], [0025] and Figure 1 (entitled “Heat Seal Maximum Force” and identifying the y-axis as “Seal Force (N/cm)”) *with* Spec., paras. [0020], [0026] and Figure 2 (entitled “Hot Tack @ 250 msec” and identifying the y-axis as “Hot Seal Strength (N/cm)”). Thus, we find that the “seal strength” values reported in Fina Figures 3A and 3B cannot be equated with the “maximum seal force” properties recited in the claims on appeal.

The Appellants also argue that “Fina does not teach, show or suggest corona treating films to increase the heat seal properties thereof.” App. Br. 4.

The Examiner correctly explains:

[T]he claims do not require the film to be corona treated. Rather, the claims require that the film meet certain seal force properties “upon corona treatment.” The corona treatment is not positively recited; it is describing the conditions under which the film meets the claimed maximum seal force limitation. Thus, an untreated film reads on the claimed invention so long as it meets the claimed maximum seal force limitation if/when it is corona treated.

Ans. 7.

The Appellants have not pointed to any error in the Examiner's finding that Fina discloses a metallocene catalyzed isotactic polypropylene copolymer film that is compositionally identical to the claimed metallocene catalyzed isotactic polypropylene copolymer film. Based on the record before us, we find that the "maximum seal force" of a film, either before or after corona treatment, is an inherent property of the film. Thus, we find that the film disclosed in Fina inherently has a maximum seal force as recited in the claims on appeal. *Papesch*, 315 F.2d at 391 (a compound and all of its properties are inseparable)

Finally, the Appellants argue that the films of the Appellants' invention unexpectedly have "improved printability (via corona treatment), while still maintaining heat seal temperatures below 105°C, as recited in the pending claims." App. Br. 5. An appellant, however, cannot overcome a rejection under 35 U.S.C. § 102 by showing unexpected results. *In re Malagari*, 499 F.2d 1297, 1302 (CCPA 1974).

For the reasons set forth above, the Appellants have failed to show that the Examiner reversibly erred in rejecting claims 2-8, 21, and 24-27 under 35 U.S.C. § 102(b) as anticipated by Fina.

F. DECISION

The rejection of claims 2-8 and 24-27 under 35 U.S.C. § 112, first paragraph, based on the enablement requirement is affirmed.

The rejection of claims 2-8, 21, and 24-27 under 35 U.S.C. § 102(b) as anticipated by Fina is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 35 U.S.C. § 1.136(a) (2008).

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AFFIRMED

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