

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

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT A. MIGLIORINI
and DAVID AUGUST LIESTMAN

Appeal No. 2004-2292
Application No. 09/747,537

ON BRIEF

Before WARREN, TIMM and JEFFREY T. SMITH, *Administrative Patent Judges*.
JEFFREY T. SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

Applicants appeal the decision of the Primary Examiner finally rejecting claims 1 to 7, 9, 10, 12 to 30, 33, 35, 37 and 38. We have jurisdiction under 35 U.S.C. § 134.¹

CITED PRIOR ART

¹ In rendering this decision, we have considered Appellants' arguments presented in the Brief, filed March 19, 2004, and the Reply Brief, filed July 20, 2004.

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As evidence of unpatentability, the Examiner relies on the following references:

Arita et al. (Arita)	4,652,490	Mar. 24, 1987
Blemberg et al. (Blemberg)	5,108,844	Apr. 28, 1992
Schloegl et al. (Schloegl)	5,234,733	Aug. 10, 1993
Peiffer et al. (Peiffer)	5,372,882	Dec. 13, 1994
Keller et al. (Keller)	5,691,043	Nov. 25, 1997

The Examiner entered the following rejections:

(I). Claims 1-7, 9, 10, 13-18, and 30 stand rejected under 35 U.S.C. 103(a) as unpatentable over Schloegl in view of Blemberg.

(II). Claim 12 stands rejected under 35 U.S.C. 103(a) as unpatentable over Schloegl in view of Blemberg, as applied to claims 1-7, 9, 10, 13-18, and 30 above, and further in view of Arita.

(III). Claims 1-7, 9, 10, 13-18, 29, and 30 stand rejected under 35 U.S.C. 103(a) as unpatentable over Schloegl in view of Keller.

(IV). Claim 12 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Schloegl in view of Keller, as applied to claims 1-7, 9, 10, 13-18, 29, and 30 above, and further in view of Arita.

(V). Claims 1-7, 9, 10, 13-28, 30, 33, 35, 37, and 38 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Peiffer in view Blemberg.

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(VI). Claim 12 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Peiffer in view of Blemberg, as applied to claims 1-7, 9, 10, 13-28, 30, 33, 35, 37, and 38, and further in view of Arita.

(VII). Claims 1-7, 9, 10, 13-30, 33, 35, 37, and 38 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Peiffer in view of Keller.

(VIII). Claim 12 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Peiffer in view of Keller, as applied to claims 1-7, 9, 10, 13-30, 33, 35, 37, and 38, and further in view of Arita. (Answer, pp. 3-15).

We have carefully reviewed the claims, specification and applied prior art, including all of the arguments advanced by both the Examiner and Appellants in support of their respective positions. This review leads us to conclude that the Examiner's § 103 rejections are well founded. See *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1471-1472, 223 USPQ 785, 787-788 (Fed. Cir. 1984).

Rather than reiterate the conflicting viewpoints advanced by the Examiner and the Appellants concerning the above-noted rejections, we refer to the Answer and the Briefs.

We initially note that Appellants assert that for purposes of appeal there are at least two separately patentable groups of claims. Group 1

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consists of claims 1-7, 9, 10 and 12-18. Group 2 consists of claims 19-30, 33, 35, 37 and 37. However, Appellants have failed to provide arguments directed to the separate groups. Consequently, for each ground of rejection the rejected claims will stand or fall together. See 37 CFR § 1.192(c)(7)(2003)(now 37 CFR § 41.37(c)(1)(vii), effective Sept. 13, 2004; 69 Fed. Reg. 49960 (Aug. 12, 2004); 1286 Off. Gaz. Pat. Office 21 (Sept. 7, 2004)); and *In re McDaniel*, 293 F.3d 1379, 1383, 63 USPQ2d 1462, 1465 (Fed. Cir. 2002).

OPINION

Appellants' invention relates to multilayer polymeric films and methods for producing the films. The films are high shrink films comprising a core layer and two skin layers. The skin layers incorporate a copolymer or terpolymer material. The core layer includes a polypropylene, a polymeric modifier, and a hydrocarbon resin. According to Appellants, the films exhibit excellent optics, mechanical properties and sealability. (Brief, p. 2). Claim 1, which is representative of the claimed invention, appears below:

1. A multi-layer polymeric shrink film comprising:
 - (a) a first skin layer having a first side and a second side, wherein the first skin layer comprises a polymer selected from

the group consisting of ethylene-propylene random copolymers, ethylene-propylene-butene random terpolymers, propylene-butene copolymers, and low density polyethylene;

(b) a core layer comprising polypropylene, a polymeric modifier, and a hydrocarbon resin wherein the core layer has a first side and a second side and the first side of the core layer is adjacent to the second side of the first skin layer; and

(c) a second skin layer having a first side and a second side wherein the first side of the second skin layer is adjacent to the second side of the core layer,

wherein the core layer comprises up to about 15 percent weight of the polymeric modifier and up to about 15 percent by weight of the hydrocarbon resin, wherein said film is biaxially oriented so as to be shrinkable in both the machine direction (MD) and the transverse direction (TD), and wherein said film has greater than 20% overall area reduction shrinkage at 135°C.

The specification discloses that the core layer comprises "a blend of a more isotactic polypropylene with modifiers which are polyolefin materials which are less crystallizable due to a higher degree of chain imperfections or lower isotacticity." (Specification, p. 3). Suitable modifiers include polyolefins other than isotactic polypropylene. (Specification, p. 3). The specification also discloses that hydrocarbon resins are well known processing aids for polypropylene based films. The hydrocarbon resins are said to enhance certain physical properties such as stiffness and gloss. (Specification, p. 1).

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The Examiner rejected claims 1-7, 9, 10, 13-18, and 30 under 35 U.S.C. 103(a) over the combined teachings of Schloegl and Blemberg. We affirm. We select claim 1 as representative.

According to the Examiner, Schloegl teaches a shrink film which comprises a plurality of polyolefinic layers. The base layer comprises 60-95 wt% polypropylene and 5-40 wt% of a hydrocarbon resin mixture. The layers on each side of the base layer comprise polyolefinic sealable raw materials (Answer, pp. 3-4). Schloegl discloses that suitable hydrocarbon resins include styrene resins, cyclopentadiene resins, toluene, and their hydrogenated derivatives (col. 3, line 23+). The Examiner asserts that the film of Schloegl possesses a shrinkability of more than 15% in the transverse direction and less than 6% in the longitudinal direction.² (Answer, p. 4). According to the Examiner, Schloegl does not teach that the base layer should comprise a polymeric modifier. However, Schloegl discloses "[i]n order to further improve certain properties of the polyolefinic film according to this invention, effective amounts of appropriate additives, such as antistatic agents, slip agents or lubricants, may be contained in the

² Appellants have not argued that the film of Schloegl does not possess the property of greater than 20% overall area reduction shrinkage at 135°C. (See Briefs generally).

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base layer and in the two sealing layers.” (Col. 4, ll. 3-8). Schloegl also discloses that the films can be biaxially oriented. (Col. 2, ll. 64-65).

The Examiner found that Blemberg teaches a co-extruded multilayer film having layers that exhibit improved adhesion to one another when the layers comprise blends wherein the components of the blends have been adjusted for this purpose. (Answer, pp. 4-5). Blemberg teaches that the “invention concerns improving the adhesion of polyolefins, vinylidene chloride copolymers, polyesters, polyamides and/or polycarbonates, as generically described above, X and Y can be any material suitable for making film layers therefrom. Such materials, by way of example, include generally polyolefins”. (Col. 2, ll. 32-38). Blemberg also discloses that the films can be biaxially oriented. (Col. 4, ll. 24-27). Thus, the Examiner determined that “it would have been obvious to one of ordinary skill in the art to blend the olefinic polymer comprising the sealable layer of Schloegl into the base layer in amounts sufficient to improve adhesion of the core to the skin layers. The sealable olefinic polymer would read on the claimed ‘polymeric modifier.’” (Answer, p. 5).

Appellants argue that the teachings and suggestions of Blemberg are inapplicable to the Schloegl reference. (Brief, p. 5). Specifically,

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Appellants argue "Schloegl reveals no adhesion problems between layers nor would one expect adhesion problems in his films because of the chemical similarities of the adjacent layer materials. This fact is convincingly supported in the record by the Declaration of the inventor, Robert Migliorini, filed January 20, 2004, pointing out that adhesion problems do not exist between adjacent polyolefin film layers." (Brief, p. 5). Appellants reiterate this argument on pages 1 and 2 of the Reply Brief.

Migliorini in the declaration states that Blemberg is directed to "biaxially oriented polymeric film structures with adjacent coextruded layers that are produced from different categories of polymeric materials". (Paragraph 5). The declarant further states that based on his experience "adjacent layers of biaxially oriented coextruded polymeric films produced from the same category of polymeric materials, such as polyolefin-based materials, do not exhibit low adhesion and the accompanying problems associated with adjacent layers of categorically different materials." (Paragraph 6).

Appellants' arguments and supporting declaration appear to argue that the applied prior art does not provide the details as to how to carry out improving the adhesion of adjacent layers of a multilayer film.

We do not find Appellants' arguments persuasive. As stated above, Blemberg discloses that the layers of a multilayer film exhibit improved adhesion to one another when the adjacent layers comprise blends of the layer polymers. Blemberg discloses that this improved adhesion would occur in adjacent layers comprising polyolefins. Specifically, Blemberg discloses "if a first layer comprises film forming polymer or copolymer X and a second layer comprises film forming polymer or copolymer Y, these layers can have improved adhesion to each other when formed into a multilayer film by coextrusion if the first layer comprises 70 to 90% by weight of X and 30 to 10% by weight of Y (rather than 100% of X) and the second layer comprises 70 to 90% by weight Y and 30 to 10% by weight of X (rather than 100% of Y)." (Col. 2, ll12-21). The Blemberg reference is not limited to adjacent coextruded layers that are produced from different categories of polymeric materials. (Col. 2, ll 35-37).

Appellants' declaration evidence is not persuasive that improved adhesion would not occur in adjacent layers as disclosed in Blemberg. The declaration does not indicate testing, such as described in the reference, was performed in formulating the opinions expressed therein.³

³ We have not been directed to evidence that testing was performed showing that at least some enhanced adhesion was not obtained.

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Consequently, on this record, Appellants have not demonstrated that one of ordinary skill in the art would not have reasonably expected that at least some improved adhesion in adjacent layers comprising polyolefins, as described in Blemberg, would have been obtained.

Appellants also argue that the requisite motivation to combine the teachings of Schloegl and Blemberg to render the rejected claims obvious is missing absent hindsight reconstruction. (Brief, p. 6).

We do not agree. As stated above, Blemberg discloses that layers of a multilayer film, including polyolefin containing layers, exhibit improved adhesion to one another when the adjacent layers comprise blends. Consequently, a person of ordinary skill in the art would have reasonably expected that adhesion would have been improved. "For obviousness under § 103, all that is required is a reasonable expectation of success." *In re O'Farrell*, 853 F.2d 894, 904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988).

We also note that the Blemberg reference discloses an embodiment that differs from the claimed invention in that tie layer (T) does not include a hydrocarbon resin. (Col. 3, l 30 et seq.). As stated above, Schloegl describes biaxially stretched films that comprise hydrocarbon modifiers in the core layer. The present record indicates that persons of ordinary skill in

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the art would have recognized that hydrocarbon resins are well known processing aids for polypropylene based films which improve the physical properties of the films. Thus, it would have been obvious to a person of ordinary skill in the art to incorporate a hydrocarbon processing aid in the tie layer of Blemberg in order to obtain improved mechanical properties. The prior art must be considered together with the knowledge of persons of ordinary skill in the pertinent art. The prior art need not explain every detail since it is speaking to those skilled in the art. *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1675 (Fed. Cir. 1994) (*quoting DeGeorge v. Bernier*, 768 F.2d 1318, 1323, 226 USPQ 758, 762 (Fed. Cir. 1985)).

The Examiner rejected claim 12 under 35 U.S.C. 103(a) over the combined teachings of Schloegl, Blemberg and Arita. We affirm.

Claim 12 further defines the subject matter of claim 1 by specifying that the skin layer comprises low density polyethylene (LDPE). The Examiner relies on the Arita reference for describing a heat shrinkable film comprising an oriented polypropylene core and two outer heat shrinkable sealant layers. According to the Examiner, Arita teaches that the sealant layer may comprise LLDPE or LDPE. (Answer, p. 6). Thus, the Examiner determined that it would have been obvious to formulate a skin layer

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comprising low density polyethylene. This position by the Examiner seems reasonable.

Appellants argue that the subject matter of claim 12 is patentable for the reasons discussed regarding the rejection over Schloegl and Blemberg. (Brief, p. 6). Appellants' argument is not persuasive because Appellants have not addressed the motivation presented by the Examiner for combining the cited references. Thus, for the reasons presented by the Examiner we affirm the rejection of claim 12.

The Examiner rejected claims 1-7, 9, 10, 13-18, 29, and 30 under 35 U.S.C. 103(a) over the combined teachings of Schloegl and Keller. We affirm. We select claim 1 as representative.

The Schloegl reference was discussed above.

The Examiner found that Keller describes uniaxially heat shrinkable, biaxially oriented multilayer polypropylene based films. (Answer, pp. 7-8). The films contain a core that comprises a blend of a more isotactic propylene with modifiers which are polyolefin materials which are less crystallizable due to their higher degree of chain imperfections or lower isotacticity. Suitable modifiers include polyolefins other than isotactic polypropylene. (Col. 4, ll. 41-65). Keller discloses that a film comprising the

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desired crystallinity has improved tear resistance during secondary orientation. (Col. 5, ll. 1-10).

The Examiner determined that it would have been obvious to a person of ordinary skill in the art to add a polyolefin modifier to the core layer of Schloegl in order to reduce the crystallinity of the core layer. (Answer, p. 8). The resulting multilayered film would also have the property of improved tear resistance as disclosed by Keller. (Col. 5).

Appellants argue that one skilled in the art would not have been motivated to look to the teachings of Keller to modify Schloegl because of the fundamentally different techniques used to produce the films of Schloegl and Keller. Specifically, Appellants argue that the Schloegl films are produced by conventional biaxial orientation techniques while the Keller films are produced by a process that includes an unconventional secondary orientation. (Brief, pp. 7-9).

Appellants' arguments are not persuasive. It is not necessary for the Schloegl reference to require a secondary stretching process for a person of ordinary skill in the art to have motivation to include a modifier. The test for obviousness is what the combined teachings of those references would have suggested to those of ordinary skill in the art. *In re Keller*, 642 F.2d 413,

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425, 208 USPQ 871, 881 (CCPA 1981). A person of ordinary skill in the art would have been motivated to employ a modifier in the core layer of the multilayered film of Schloegl in order to reduce the crystallinity of the core layer and obtain a film with improved tear resistance as disclosed by Keller.⁴

Appellants also refer to the Migliorini declaration to support their arguments. (Brief, pp. 7-9). The Migliorini declaration is not persuasive because it does not address the identified motivation for inclusion of a modifier in the multilayered film of Schloegl. The declarant does not address the reduction in the crystallinity of the core layer and the resulting obtained film with improved tear resistance. The declarant's comments are directed Keller's secondary orientation process. The declarant asserts that the secondary orientation process creates a high degree of stress on the previously stretched film which could lead to tearing. (Paragraph 11). We note that the neither declarant or Appellants' representative have asserted that the film of Schloegl would not have a reduction in the

⁴Notwithstanding Appellants' arguments, a person of ordinary skill in the art would have reasonably expected that the film of Schloegl comprising a modifier would have improved tear resistance and would have been capable of undergoing a secondary stretching as described by the Keller reference.

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crystallinity of the core layer and a resulting film with improved tear resistance.

We also note that the Keller reference differs from the claimed invention in that Keller does not include a hydrocarbon resin in the core layer. As stated above, Schloegl describes biaxially stretched films that comprise hydrocarbon modifiers in the core layer. The present record indicates that persons of ordinary skill in the art would have recognized that hydrocarbon resins are well known processing aids for polypropylene based films which improve the physical properties of the films. Thus, it would have been obvious to a person of ordinary skill in the art to incorporate a hydrocarbon processing aid in the core layer of Keller in order to obtain improved mechanical properties. The prior art must be considered together with the knowledge of persons of ordinary skill in the pertinent art. The prior art need not explain every detail since it is speaking to those skilled in the art. *Paulsen, supra*.

The Examiner rejected claim 12 under 35 U.S.C. 103(a) over the combination of Schloegl, Keller and Arita. We affirm.

As stated above, the Examiner relies on the Arita reference to establish that employing low density polyethylene in the skin layer of a

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multilayered film would have been obvious to a person of ordinary skill in the art.

Appellants argue that the subject matter of claim 12 is patentable for the reasons discussed regarding the rejection over Schloegl and Keller. (Brief, p. 9). Appellants' argument is not persuasive because Appellants have not addressed the motivation presented by the Examiner for combining the cited references. Thus, for the reasons presented by the Examiner we affirm the rejection of claim 12.

The Examiner rejected claims 1-7, 9, 10, 13-28, 30, 33, 35, 37, and 38 under 35 U.S.C. 103(a) over the combined teachings of Peiffer and Blemberg. We affirm. We select claim 1 as representative.

According to the Examiner, Peiffer teaches multilayer polypropylene based films. (Answer, pp. 9-10). Peiffer discloses a multilayer polymeric film comprising at least one skin layer. The skin layers preferably comprise ethylene-propylene-butylene terpolymer or a mixture of this terpolymer with one or more copolymers comprising ethylene and propylene or ethylene and butylene or propylene and butylene units. (Col. 4, ll. 24-28). The core (base) layer preferably comprises polymers of polypropylene. (Col. 3, ll. 18-

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21). Peiffer further discloses the core layer preferably comprises 2% to 10% by weight of a hydrocarbon resin. (Col. 5, ll. 8-22).

The Blemberg reference has been discussed above. The Examiner determined that "it would have been obvious to one of ordinary skill in the art to blend the olefinic polymer comprising the sealable layer of Peiffer into the core layer in amounts sufficient to improve adhesion of the core to the skin layers. (Answer, p. 10).

Appellants argue that the teachings and suggestions of Blemberg are inapplicable to the Peiffer reference. Appellants rely on the arguments presented in response to the rejection over the combined teachings of Schloegl and Blemberg. (Brief, p. 10).

Here again, we are not persuaded by Appellants arguments. We rely on our discussion presented when discussing the rejection over the combined teachings of Schloegl and Blemberg above and add the following. Peiffer discloses that the core layer also preferably comprises an ethylene-propylene copolymer. (Col. 3, ll. 39-41). This additional copolymer would function the same as the polymeric modifier required by the present invention. Thus, contrary to Appellants' position, a person of ordinary skill in the art would have reasonably expected that a modifier,

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i.e., an additional olefin copolymer could have been incorporated into the core layer of Peiffer's multilayered film.

The Examiner rejected claim 12 under 35 U.S.C. 103(a) over the combined teachings of Peiffer, Blemberg and Arita. We affirm.

As stated above, the Examiner relies on the Arita reference to establish that employing low density polyethylene in the skin layer of a multilayered film would have been obvious to a person of ordinary skill in the art.

Appellants argue that the subject matter of claim 12 is patentable for the reasons discussed regarding the rejection over Peiffer and Blemberg. (Brief, p. 10). Appellants' argument is not persuasive because Appellants have not addressed the motivation presented by the Examiner for combining the cited references. Thus, for the reasons presented by the Examiner we affirm the rejection of claim 12.

The Examiner rejected claims 1-7, 9, 10, 13-30, 33, 35, 37, and 38 under 35 U.S.C. 103(a) over the combined teachings of Peiffer and Keller. We affirm. We select claim 1 as representative.

The Peiffer and Keller references have been discussed above. The Examiner determined that it would have been obvious to a person of

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ordinary skill in the art to add a polyolefin modifier to the core layer of Peiffer in order to reduce the crystallinity of the core layer. (Answer, p. 14). The resulting multilayered film would also have the property of improved tear resistance as disclosed by Keller. (Col. 5).

Appellants rely on the arguments presented in response to the rejection over the combined teachings of Schloegl and Keller. (Brief, p. 11). In particular, Appellants argue that one skilled in the art would not have been motivated to look to the teachings of Keller to modify Peiffer because of the fundamentally different techniques used to produce the films of Peiffer and Keller.

Appellants' arguments are not persuasive. As stated above, Peiffer discloses that the core layer also preferably comprises an ethylene-propylene copolymer. This additional copolymer would function the same as the polymeric modifier required by the present invention. Thus, contrary to Appellants' position, a person of ordinary skill in the art would have reasonably expected that a modifier, i.e., an additional olefin copolymer could have been incorporated into the core layer of Peiffer's multilayered film. We additionally rely on our discussion presented when discussing the rejection over the combined teachings of Schloegl and Keller above.

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The Examiner rejected claim 12 under 35 U.S.C. 103(a) over the combined teachings of Peiffer, Keller and Arita. We affirm.

As stated above, the Examiner relies on the Arita reference to establish that employing low density polyethylene in the skin layer of a multilayered film would have been obvious to a person of ordinary skill in the art.

Appellants argue that the subject matter of claim 12 is patentable for the reasons discussed regarding the rejection over Peiffer and Keller. (Brief, p. 11). Appellants' argument is not persuasive because Appellants have not addressed the motivation presented by the Examiner for combining the cited references. Thus, for the reasons presented by the Examiner we affirm the rejection of claim 12.

For the foregoing reasons and those set forth in the Answer, based on the totality of the record, we determine that the preponderance of evidence weighs in favor of obviousness, giving due weight to Appellants arguments in the briefs and evidence. Accordingly, the Examiner's rejections under 35 U.S.C. § 103 are affirmed.

CONCLUSION

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We affirm all of the Examiner's rejections: (I) The rejection of claims 1-7, 9, 10, 13-18, and 30 under 35 U.S.C. 103(a) over the combined teachings of Schloegl and Blemberg; (II) The rejection of claim 12 under 35 U.S.C. 103(a) over the combined teachings of Schloegl, Blemberg and Arita; (III) The rejection of claims 1-7, 9, 10, 13-18, 29, and 30 under 35 U.S.C. 103(a) over the combined teachings of Schloegl and Keller; (IV) The rejection of claim 12 under 35 U.S.C. 103(a) over the combination of Schloegl, Keller and Arita; (V) The rejection of claims 1-7, 9, 10, 13-28, 30, 33, 35, 37, and 38 under 35 U.S.C. 103(a) over the combined teachings of Peiffer and Blemberg; (VI) The rejection of claim 12 under 35 U.S.C. 103(a) over the combined teachings of Peiffer, Blemberg and Arita; (VII) The rejection of claims 1-7, 9, 10, 13-30, 33, 35, 37, and 38 under 35 U.S.C. 103(a) over the combined teachings of Peiffer and Keller; and (VIII) The rejection of claim 12 under 35 U.S.C. 103(a) over the combined teachings of Peiffer, Keller and Arita.

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TIME FOR TAKING ACTION

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(iv)(effective Sep. 13, 2004; 69 Fed. Reg. 49960 (Aug. 12, 2004); 1286 Off. Gaz. Pat. Office 21 (Sep. 7, 2004)).

AFFIRMED

CATHERINE TIMM
Administrative Patent Judge

JEFFREY T. SMITH
Administrative Patent Judge

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) **BOARD OF PATENT**
) **APPEALS AND**
) **INTERFERENCES**
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WARREN, *Administrative Patent Judge*, Concurring-in-part and Dissenting-in-part:

I concur with the panel's decision to affirm the decision of the examiner for the following reasons.

In order to review the eight grounds of rejection under 35 U.S.C. § 103(a) on appeal (*see above* pp. 2-3), it is necessary to interpret the language of appealed independent claims 1 and 19, drawn to product and method, respectively,⁵ by giving the claim terms their broadest reasonable interpretation consistent with the written description provided in appellants' specification as it would be interpreted by one of ordinary skill in this art, *see In re Morris*, 127 F.3d 1048, 054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989), without reading into these claims any limitation or particular embodiment which is disclosed in the specification. *See Morris, supra; Zletz, supra; In re Priest*, 582 F.2d 33, 37, 199 USPQ 11, 15 (CCPA 1978).

Appealed product claim 1 is copied above (*see* p. 5). Appealed method claim 19, as it stands of record,⁶ reads as follows:

19. A method for manufacturing a multi-layer polymeric shrink film comprising the steps of
- (a) coextruding a first skin layer comprising a polymer, a core layer comprising polypropylene, a polymeric modifier, and a hydrocarbon resin, and a second skin layer comprising a polymer;
 - (b) stretching the film of step (a) in the machine direction (MD) at a temperature of 105°C or less; and

⁵ Appellants group the appealed claims along product and method lines, wherein the claims of each group "stand or fall together" (brief, page 3). Thus, I have considered appealed claims 1 and 19 as representative of the respective groups. 37 CFR § 1.192(c)(7) (2003); *see also* 37 CFR § 41.37(c)(1)(vii) (effective September 13, 2004; 69 Fed. Reg. 49960 (August 12, 2004); 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)).

⁶ See the amendment filed June 23, 2003.

(c) stretching the film of step (b) in the transverse direction (TD),

wherein the core layer comprises up to about 15 percent weight of the polymeric modifier and up to about 15 percent by weight of the hydrocarbon resin, wherein said film is biaxially oriented so as to be shrinkable in both the machine direction (MD) and the transverse direction (TD), and wherein the first skin layer comprises a polymer selected from the group consisting of ethylene-propylene random copolymers, ethylene-propylene-butene random terpolymers, propylene-butene copolymers, and low density polyethylene.

The plain language of appealed claim 1 encompasses a multi-layer polymeric shrink film comprising at least first and second skin layers on the specified sides of the core layer. The transitional term “comprising” along with the indefinite article “a” modifying each of the three specified layers, opens the claim to encompass polymeric shrink films which include any manner of additional layers containing any manner of polymers and other materials, such as additives for film and processing characteristics, whether such layers may be characterized as “skin” or “core” layers. *See generally, KCI Corp. v. Kinetic Concepts Inc.*, 223 F.3d 1351, 1356, 55 USPQ2d 1835, 1839-40 (Fed. Cir. 2000); *Exxon Chem. Pats., Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555, 35 USPQ2d 1801, 1802 (Fed. Cir. 1995) (“The claimed composition is defined as comprising - meaning containing at least - five specific ingredients.”); *In re Baxter*, 656 F.2d 679, 686-87, 210 USPQ 795, 802-03 (CCPA 1981) (“As long as one of the monomers in the reaction is propylene, any other monomer may be present, because the term ‘comprises’ permits the *inclusion* of other steps, elements, or materials.”). The encompassed shrink films must “be biaxially oriented so as to be shrinkable in both the machine direction (MD) and the transverse direction (TD),” but there is no limitation on the amount shrinkable in either direction, the only requirement being that “said film has greater than 20% overall area reduction shrinkage at 135°C.”

The “first skin layer” comprises at least some amount, however small, of a polymer selected from the Markush group consisting of certain co- and terpolymers, wherein the term “butene” encompasses both 1-butene and 2-butene, otherwise known in the art as

alpha-butylene and beta-butylene, respectively.⁷ The open-ended term “comprising” used in defining this film component opens the claim to include shrink films in which this layer contains any amount of any manner of additional polymer(s) as well as other materials, such as additives for film and processing characteristics, that would not prevent the multi-layer polymeric film from having the shrink characteristics specified in the claim as discussed above.

There is *no* limitation stated in appealed claim 1 with respect to the materials which make up the “second skin layer,” and thus, this film component can comprise any manner of polymer(s) and/or any manner of other materials, such as additives for film and processing characteristics, that would not prevent the multi-layer polymeric film from having the shrink characteristics specified in the claim as discussed above.

The “core layer” comprises at least a polymer of “polypropylene,” any manner of “a polymeric modifier” and any manner of “a hydrocarbon resin,” and the open-ended term “comprising” used in defining this film component opens the claim to include any amount of any manner of additional polymer(s) as well as other materials, such as additives for film and processing characteristics, that would not prevent the multi-layer polymeric film from having the shrink characteristics specified in the claim as discussed above. Each of the latter two ingredients must be present “up to about 15 percent” of the weight of this layer, which in the plain language of the claim requires the presence of at least some amount, however small, up to the 15 weight percent limit, and the weight of any additional polymers and/or other materials along with the weight of the polypropylene polymer must be considered in determining the amount of the “polymeric modifier” and the “hydrocarbon resin” which can be present.

⁷ See, e.g., *The Condensed Chemical Dictionary* 157-58 (10th ed., Gessner G. Hawley, ed., New York, Van Nostrand Reinhold Company, 1981).

I find that one of ordinary skill in this art would have known from the written description in the specification that the term “polymeric modifier” encompasses any materials which modifies either one or more polymers that are present in the core layer or the effect of such polymer or polymers on that layer (specification, e.g., page 3, citing Keller; *see* Keller, e.g., col. 3, lines 2-9, and col. 4, lines 42-65). However, I find no basis in the plain language of appealed claim 1 or in the written description in the specification on which to read into this term the limitation that the only polymer modified is polypropylene when other polymers are present, and only by such modifiers as encompassed by the Markush group in appealed claim 3 and similar polymeric materials.

The methods encompassed by appealed claim 19 encompass at least the three steps specified in the claim, and the transitional term “comprising” opens the claim to methods including additional steps which provide additional layers and polymeric and other materials as well as stretch the biaxially orientated film of step (c) in a manner that results in more shrinkage in either the machine direction (MD) or in the transverse direction (TD), there being no limitation in this claim on the shrinkage in any one direction or, for that matter, in the overall area reduction shrinkage as there was in appealed claim 1. *See, e.g., Baxter, supra.*

The differences between the products of the methods encompassed by appealed claim 19 and the products encompassed by appealed claim 1 resides in the limitations of the “sides” of the three specified layers and on the shrinkage characteristics specified in the latter claim. Otherwise, the specified and unspecified ingredients in each of the three specified component layers and the additional layers which can be present in the product of the method of claim 19 is essentially the same as discussed above for product claim 1.

Turning now to the two grounds of rejection based on the combined teachings of Schloegl and Blemberg, and the two grounds of rejection based on the combined teachings of Peiffer and Blemberg, I agree with appellants’ argument that when Blemberg is read as

a whole, it would have disclosed to one of ordinary skill in this art as a matter of fact “multi-layer film structures . . . that have adjacent layers made from dissimilar polymeric materials” wherein some of the olefin polymer in the polyolefin layer is included in the dissimilar layer, and that some of the polymer in the dissimilar layer is included in the polyolefin layer (brief, pages 4-5 and 10).⁸ I find that Blemberg summarizes the disclosed invention as “film layers which do not usually adhere well to each other can be made to do so by adding to each of the separate layers a selected amount of at least one of the components of the other layer” (col. 1, ll. 47-51), and illustrates the thus disclosed invention with, among others, two layer and three layer films, the latter films having a layer termed “an adhesive or tie” layer, in which the polymers of two adjacent layers do not adhere well (col. 3, l. 3, to col. 8, l. 49).

Accordingly, I am of the opinion that one of ordinary skill in the art would have considered the passage at col. 2, l. 12, to col. 3, l. 2, in this context and would not have read this passage as encompassing films in which all layers comprise polyolefin films merely on the basis of the following sentence:

While the problem overcome by this invention concerns improving the adhesion of polyolefins, vinylidene chloride copolymers, polyesters, polyamides and/or polycarbonates, as generically described above, X and Y can be any material suitable for making film layers therefrom. [Col. 2, ll. 33-37.]

Indeed, in my view, the phrase “X and Y can be any material suitable for making film layers therefrom” reads on “dissimilar polymeric materials” other than the specifically

⁸ It is well settled that a reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in this art would have reasonably been expected to draw therefrom, *see In re Fritch*, 972 F.2d 1260, 1264-65, 23 USPQ2d 1780, 1782-83 (Fed. Cir. 1992); *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968); *In re Aller*, 220 F.2d 454, 458-59, 105 USPQ 233, 237 (CCPA 1955), presuming skill on the part of this person. *In re Sovish*, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985).

listed “polyolefins, vinylidene chloride copolymers , polyesters, polyamides and/or polycarbonates, as generically described above.”

I note in this respect that, as appellant Migliorini points out in his declaration (¶¶ 5-7), polyolefin layers in films are known in the art to adhere to each other, and indeed, neither Schloegl nor Peiffer discloses that the polyolefin films disclosed therein exhibit low adhesion between the polyolefin layers thereof, regardless of the nature of the polyolefin(s) in the layer. The examiner’s argument to the contrary in the answer (pages 16-17) is based on the bare statement in the advisory action mailed March 9, 2004, that “the prior art indicates that oriented isotactic polypropylene films are known to exhibit poor adhesion to heat sealing layers, such as polyethylene compositions, due to their non-polar character and high degree of orientation” (page 2). Indeed, as appellants point out in reply (reply brief, pages 1-2), the examiner has not established that this condition exists with the films of Schloegl and Peiffer, and has not cited any prior art in support of the position.

Therefore, I find that the record before this panel does not contain substantial evidence supporting the position of the examiner in the grounds of rejection based on the combined teachings of Schloegl and Blemberg and the combined teachings of Peiffer and Blemberg, and thus, I am of the opinion that the examiner has not made out a *prima facie* case of obviousness within the meaning of § 103(a) in these rejections.

However, I find that the combined teachings of Schloegl and Blemberg and the combined teachings of Peiffer and Blemberg nonetheless establish that the claims against which the examiner applied this prior art establish a *prima facie* case of obviousness within the meaning of § 103(a). Indeed, Blemberg would have disclosed to one of ordinary skill in this art multi-layer polymeric shrink film containing one or more “adhesive or tie” core

or base layers comprising at least polypropylene between side layers, one of which side layers can contain at least some amount of low density polyethylene, and/or propylene ethylene copolymers along with any other “polyolefins, vinylidene chloride copolymers, polyesters, polyamides and/or polycarbonates,” and the other side layer contains any manner of “vinylidene chloride copolymers, polyesters, polyamides and/or polycarbonates” (e.g., col. 2, l. 32, to col. 3, l. 2). These films differ from the claimed invention encompassed by appealed claim 1 as I have interpreted this claim above, solely in the absence of hydrocarbon resins in the base or core layer. I find in these respects that appellants acknowledge in the written description in their specification that “[h]ydrocarbon resins are well known processing aids . . . [and] for enhancing certain physical properties such as stiffness and gloss” (page 1, l. 16-18), which knowledge in the prior art is also established by the use of hydrocarbon resins in the core or base layer by Schloegl (e.g., col. 3, ll. 22-34) and Peiffer (e.g., col. 5, ll. 8-61).

Accordingly, I am of the opinion that the record contains substantial evidence supporting the proposition that one of ordinary skill in this art would have employed hydrocarbon resins in the adhesive or tie core or base layer(s) of the films disclosed by Blemberg in the reasonable expectation of obtaining the processing and property benefits known in the art to be impart by such materials as acknowledged by appellants and established by Schloegl and Peiffer. *See In re Dow Chem. Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988) (“The consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that [the claimed process] should be carried out and would have a reasonable likelihood of success viewed in light of the prior art. [Citations omitted] Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant’s disclosure.”); *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980) (“It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be

useful for the same purpose, in order to form a third composition which is to be used for the very same purpose. *In re Susi*, . . . 440 F.2d 442, 445, 169 USPQ 423, 426 ([CCPA] 1971); *In re Crockett*, . . . 279 F.2d 274, 276-77, 126 USPQ 186, 188 ([CCPA] 1960). As this court explained in *Crockett*, the idea of combining them flows logically from their having been individually taught in the prior art.”); *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981)(“The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.”); *see also In re O’Farrell*, 853 F.2d 894, 903-04, 7 USPQ2d 1673, 1680-81 (Fed. Cir. 1988) (“Obviousness does not require absolute predictability of success. . . . There is always at least a possibility of unexpected results, that would then provide an objective basis for showing the invention, although apparently obvious, was in law nonobvious. [Citations omitted.] For obviousness under § 103, all that is required is a reasonable expectation of success. [Citations omitted.]”).

The two grounds of rejection based on the combined teachings of Schloegl and Keller, and the two grounds of rejection based on the combined teachings of Peiffer and Keller, stand on an entirely different factual footing because Keller discloses the addition of a polymeric modifier for polypropylene, specifically isotactic polypropylene, to the core or base layer of a multi-layer olefin polymer shrink film, as appellants acknowledge in the written description of their specification as I pointed out above (*see p. 24*). I find in this respect that both Schloegl (col. 3, l. 13) and Peiffer(col. 3, l. 67) disclose isotactic polypropylene in the core or base layer multi-layer olefin polymer shrink films. Thus, I find substantial evidence supporting the examiner’s position that the claimed multi-layer olefin polymer shrink films would have been *prima facie* obvious over the applied

references within the meaning of § 103(a). *See Dow Chem., supra; Kerkhoven, supra; Keller, supra; see also O'Farrell, supra.*

Appellants contend that the films of Schloegl and Peiffer are prepared differently from those of Keller, pointing out that the latter reference discloses films that “are shrinkable in only the machine direction” because of “the secondary machine direction orientation process that takes place after conventional biaxial orientation,” exhibiting “a transverse shrinkage of 1% or less while exhibiting machine direction shrinkage of at least 25%,” and thus, the polymeric modifiers are used to prevent tearing during uniaxial shrinkage of the film (brief, pages 7-8, relying ¶¶ 8-12 of appellant Migliorini’s declaration; *see also* page 11; *see also* reply brief, pages 2-3). Appellants point out that in contrast, the films of Schloegl “are produced by conventional biaxial orientation techniques” in which the film “is stretched in the longitudinal [machine] direction, and then stretched in the transverse direction, and then heat set,” producing “films shrinkable in both the longitudinal [machine] and transverse directions” (*id.*, pages 7-8). Appellants further point out that “the Peiffer films are produced through conventional biaxial orientation processes” (*id.*, page 11). However, I am not persuaded that the references are not combinable.

Indeed, the disclosures of Schloegl (e.g., cols. 5-6), Peiffer e.g., cols. 7-8) and Keller (e.g., cols. 9-10) are as argued by appellants, with Keller additionally disclosing that there is some, although minimal, shrinkage in the transverse direction (col. 10, lines 14-16). However, I find that Keller further discloses that the skin layers that can be used with the core or base layer containing polypropylene and a polymer modifier therefor, “may be any of the coextrudable, biaxially orientable heat shrinkable film-forming resins known in the prior art,” such as films of co- and terpolymer polyolefins as well as linear low density polyethylene (col. 7, l. 58, to col. 8, l. 21), which include the polyolefin skin

layers of the multi-layer isotactic polypropylene core containing polyolefin shrink films of Schloegl (e.g., col. 3) and Peiffer (e.g., col. 4).

I am of the opinion that the combined teachings of Schloegl and Keller and of Peiffer and Keller would have each reasonably suggested to one of ordinary skill in the art that the polymeric modifiers for isotactic polypropylene disclosed by Keller can be added to the core or base layer containing isotactic polypropylene of the biaxially oriented films disclosed by Schloegl and by Peiffer in the reasonable expectation of obtaining films useful in the method of producing uniaxially oriented films disclosed by Keller, thus arriving at the claimed film of appealed claim 1 and the claimed method of appealed claim 19 without recourse to appellants' disclosure.

Indeed, as interpreted above, there is no limitation in claims 1 and 19 on the amount of shrinkage in either direction of the multi-layer polymeric shrink film product, thus encompassing the shrinkage in the machine direction and the minimal shrinkage in the transverse direction imparted by the method of Keller, and the method of claim 19 does not exclude the secondary orientation step, that is, uniaxially stretching in the machine direction, of the method of Keller. Furthermore, as I pointed out above (*see* p. 27), the use of hydrocarbon resins as processing aids and to impart certain physical characteristics is known in the art as appellants acknowledge and as established by Schloegl and Peiffer. *See Dow Chem., supra; Kerkhoven, supra; Keller, supra; see also O'Farrell, supra.*

Accordingly, based on my consideration of the totality of the record on appeal, I have weighed the evidence of obviousness found in the two grounds of rejection based on the combined teachings of Schloegl and Keller, and the two grounds of rejection based on the combined teachings of Peiffer and Keller,⁹ with appellants' countervailing evidence of

⁹ The contents of Arita applied in combination in the grounds of rejection with respect to appealed claim 12 are not necessary to my position. *See In re Jones*, 958 F.2d 347, 349, 21 USPQ2d 1941, 1942 (Fed. Cir. 1992); *In re Kronig*, 539 F.2d 1300, 1302-04, 190 USPQ 425, 426-28 (CCPA 1976).

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and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claims 1 through 7, 9 10, 12 through 30, 33, 35, 37 and 38, which are all of the appealed claims, would have been obvious as a matter of law under 35 U.S.C. § 103(a).

In summary, I agree with the affirmance by the majority of this panel of the grounds of rejection based on the combined teachings of Schloegl and Keller and of Peiffer and Keller, and disagree with the affirmance by the majority of this panel of the grounds of rejection based on the combined teachings of Schloegl and Blemberg and of Peiffer and Blemberg as applied by the examiner. However, I suggest that any further prosecution of the appealed claims before the examiner include consideration of the combined teachings of Schloegl and Blemberg and the combined teachings of Peiffer and Blemberg in the manner that I have set forth above (*see* pp. 26-28).

Accordingly, since I concur in the affirmance by the majority of this panel of grounds of rejection involving all appealed claims, I concur with the decision of the majority of this panel to affirm the decision of the examiner.

CHARLES F. WARREN) BOARD OF PATENT
Administrative Patent Judge) APPEALS AND
) INTERFERENCES

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