

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. 47

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* PETER OHMAN and ROLF LASSON

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Appeal No. 2001-1884  
Application No. 08/718,692

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HEARD: MAY 20, 2003

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Before PAK, DELMENDO, and JEFFREY T. SMITH, *Administrative Patent Judges*.

PAK, *Administrative Patent Judge*.

*DECISION ON APPEAL*

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's refusal to allow claims 39 through 41, 49 through 60, 66 through 71 and 73 through 75. Claims 42 through 47 and 61 through 65, the remaining claims in the above-identified application, have been indicated to be allowable "if rewritten in independent form including all of the limitations of the base claim and any intervening claims." See the final Office action dated May 30, 2000 (Paper No. 32), page 5.

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*APPEALED SUBJECT MATTER*

The subject matter on appeal is directed to a method of producing a packaging laminate material through uniting first and second plastic webs under simultaneous application of heat and pressure after they have been subjected to a non-chemical activation treatment. See the specification, page 4. The use of this non-chemical activation treatment overcomes "serious drawbacks" in a conventional packaging laminate forming process, which employs chemical binding agents associated with environmentally hazardous solvents. *Id* at page 3. According to appellants (*Id* at page 4):

The non-chemical surface activating treatment of the webs is carried out in connection with, preferably immediately before, the webs being brought together and, in principle, is based on the concept that a high frequency electric field through which each respective web is passed activates surface molecules or molecule fractions occurring in the plastic or plastics in such a manner that the plastics will become mutually reactive and **may permanently bond** to one another.

Surface-activating treatments of this type are per se known and, for example, include so-called plasma-treating, corona-treating, flame-treating and others . . . . [Emphasis ours.]

Details of the appealed subject matter are illustrated in representative claims 39 and 68 reproduced below:

39. A method of producing a laminate material suitable for use in packaging material, comprising:

providing a pre-manufactured first web comprising a layer of polyethylene extruded at a temperature  $T_e$  above a breakpoint temperature which is higher than a normal melting temperature  $T_m$  of the extruded polyethylene, said layer of polyethylene having an outer surface;

providing a second web comprising a layer of PET or OPET, said PET or OPET having an outer surface;

subjecting the first web and the second web to a non-chemical surface activation treatment in a continuous process; and

contacting the outer surface of the polyethylene layer of the first web with the outer surface of the PET or OPET layer of the second web and permanently uniting the first and second webs which have been subjected to the surface activation treatment with one another by simultaneous application of heat and pressure.

58. A method of producing a laminate material suitable for use in packaging material comprising:

providing a pre-manufactured first web comprising a layer of polyethylene extruded at a temperature  $T_e$  above a breakpoint temperature which is considerably higher than a normal melting temperature  $T_m$  of the extruded polyethylene, said layer of polyethylene having an outer surface;

advancing the first web and a second web comprising a layer of PET or OPET, said PET or OPET having an outer surface, while subjecting the first and second webs to a non-chemical surface activation treatment; and

contacting the outer surface of the polyethylene layer of the first web with the outer surface of the PET or OPET layer of the second web and permanently uniting the first and second webs with one another under simultaneous application of heat and pressure.

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These claims define a polyethylene layer, which is part of the claimed pre-manufacture first web, by a product-by-process limitation.

*PRIOR ART*

The examiner relies on the following prior art references:

Martin et al. (Martin)	3,901,755	Aug. 26, 1975
Bradley	3,959,567	May 25, 1976
Shiraki et al. (Shiraki)	4,987,025	Jan. 22, 1991
Take et al. (Take)	5,296,070	Mar. 22, 1994
Asao (Published Japanese Kokai Patent Application)	53-120791	Oct. 21, 1978

*THE REJECTIONS*

The appealed claims stand rejected as follows:

- 1) Claims 39, 40, 49, 52, 54, 56 through 59 and 66 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Bradley, Shiraki, and Asao;
- 2) Claims 41 and 60 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Bradley, Shiraki, Asao and Martin; and
- 3) Claims 50, 51, 53 through 55, 57, 66 through 71 and 73 through 75 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Bradley, Shiraki, Asao, and Take.

OPINION

We have carefully reviewed the claims, specification, and prior art, including all of the arguments advanced by both the examiner and the appellants in support of their respective positions. This review has led us to conclude that the examiner's Section 103 rejections are well founded. However, we only affirm the examiner's Section 103 rejections (1) and (2) above for the factual findings and conclusions set forth in the Answer and below. We affirm the examiner's Section 103 rejection (3) above for reasons different from those proffered by the examiner. Accordingly, pursuant to 37 CFR § 1.196(b)(2001), we denominate our affirmance of this rejection as including a new ground of rejection.

We turn first to the examiner's rejection of claims 39, 40, 49, 52, 54, 56 through 59 and 66 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Bradley, Shiraki and Asao.<sup>1</sup> The examiner finds (Answer, page 4), and the

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<sup>1</sup> For purposes of this rejection, the appellants have grouped claims 39, 40, 49, 52, 54, 56 through 59 and 66 together. See the Brief, page 7. Therefore, we decide the propriety of this rejection based on claim 39 alone consistent with 37 CFR § 1.192(c)(7)(2001). See also *In re McDaniel*, 293 F.3d 1379, 1383, 63 USPQ2d 1462, 1465 (Fed. Cir. 2002) ("If the brief fails to meet either requirement [of 37 CFR § 1.192(c)(7)(2001)], the Board is free to select a single claim from each group of claims

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appellants do not dispute (Answer, page 8), that:

Bradley discloses a method for making laminates suitable for use in packaging comprising: providing a polyethylene film; providing a polyester film; exposing the films to gas discharge plasma while feeding the films from supply rollers in order to activate the films; and then bonding the films by compressing them together between two rollers, one of which is heated (col. 2, line 30 - col. 7, line 42).

The examiner acknowledges that the polyethylene film employed in Bradley is not defined by the claimed product-by-process limitation, i.e., "a layer of polyethylene extruded at a temperature  $T_e$  above a breakpoint temperature which is higher than a normal melting temperature  $T_m$  of the extruded polyethylene." See the Answer, page 4. Such limitation, however, does not impart patentability to the claimed method for forming a laminate material because the appellants have not demonstrated that the polyethylene film defined by the claimed product-by-process limitation is patentably different from that employed in Bradley. See *In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985)("[i]f the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art

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subject to a common ground of rejection as representative of all claims in that group and to decide the appeal of that rejection based solely on the selected representative claim").

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product was made by a different process"); *in accord In re Hiraio*, 535 F.2d 67, 68-69, 190 USPQ 15, 17 (CCPA 1976); *See also In re De Blauwe*, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984) (mere arguments in the Brief or conclusory statements<sup>2</sup> in the specification regarding the properties of the claimed product cannot take the place of objective evidence); *in accord In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972).

Even if we were to treat the claimed product-by-process limitation as the process limitation for carrying out the claimed method, our conclusion would not be changed. We observe that Shiraki teaches an inflation film of an ultra-high-molecular weight polyethylene film (i.e., an extruded ultra-high-molecular weight polyethylene film<sup>3</sup>) useful for, *inter alia*, packaging. See also column 1, lines 10-26 and column 7, lines 18-28. The ultra-high-molecular weight polyethylene film has advantageous properties for packaging, due to "its excellent impact resistance, abrasion resistance, chemical resistance, tensile

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<sup>2</sup> We observe certain conclusory statements at page 4, line 34 to page 5, line 6 and page 7, lines 28-32, of the subject application regarding the advantage of using a polyethylene film produced by certain extrusion temperatures. However, they are also unsupported by any factual evidence.

<sup>3</sup> See column 1, line 25.

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strength and other properties, when compared with conventional polyethylene." See column 1, lines 15-20 and column 2, lines 29-38, together with column 7, lines 18-28. This ultra-high molecular weight polyethylene film is extruded at "[a] temperature . . . higher than the melting point of the polyethylene but lower than 350 °C. . . ." See column 5, lines 20-24. "The preferable extrusion temperature conditions of the above-mentioned ultra-high-molecular-weight polyethylene are an extruder temperature of 200 °C. to 330 °C. . . ." See column 5, lines 28-31. This extrusion method alleviates certain drawbacks associated with prior extrusion processes for producing ultra-high-molecular-weight polyethylene films. See column 1, line 30 to column 2, line 15). Thus, we determine that the combined teachings of Bradley and Shiraki would have led one of ordinary skill in the art to employ the ultra-high-molecular weight polyethylene films extruded in the claimed manner as the pre-manufactured polyethylene film used in the process of Bradley, motivated by a reasonable expectation of successfully obtaining the advantages taught in Shiraki.

The appellants argue that Bradley does not teach or suggest "permanently uniting the first and second webs which have been subjected to the surface activation treatment . . . ." We are not persuaded by this argument.

First, upon giving the phrase "permanently uniting"<sup>4</sup> the broadest reasonable interpretation in light of the specification, we determine that the phrase does not exclude the permanent bonding of the type exemplified in Bradley. Specifically, the phrase in question embraces those webs which remain "permanently bonded" at ambient condition (but are not permanently bonded (separated) in boiling water) as exemplified at column 7, lines 30-37, of Bradley.

Second, even if we were to conclude the phrase "permanently uniting" in the claims on appeal excludes the bonded webs exemplified in Bradley, we still find "ample suggestion" in Bradley itself to "permanently bond" the webs described therein. Specifically, we find that Bradley teaches at column 7, lines 19-30, that:

Apparently, in the present process, chemical linkages are

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<sup>4</sup> The specification does not define the meaning of the phrase "permanently bonding." See the specification in its entirety. Nor does it indicate conditions at which the claimed webs are permanently bonded. *Id.*

formed across the interface between the juxtaposed surfaces of the components. It is a unique characteristic of the present process that the bond between the two components can be controlled by regulating the duration of their exposure to plasma activation, the plasma current, the temperature to which the activated components are heated, and how long they are heated. By controlling the process parameters, laminates having widely different lamination strengths can be provided to satisfy different requirements.

Thus, we determine that it would have been *prima facie* obvious to provide desired bonding strengths, including the "permanent bonding" strength, to the webs described in Bradley, to meet the packaging requirement for a given product. See also the statements in the specification highlighted above.

The appellants appear to argue that the permanent bonding of the claimed webs can only be obtained by using a combination of a particularly extruded polyethylene film and a non-chemical activation treatment. See the Brief, pages 10-11. However, this argument is not supported by any objective evidence. See *De Blauwe*, 736 F.2d at 705, 222 USPQ at 196; *Lindner*, 457 F.2d at 508, 173 USPQ at 358. Specifically, the appellants have not proffered any evidence that the webs, including the polyethylene films, described in Bradley cannot be "permanently bonded" via controlling the process parameters taught in Bradley.

In view of the foregoing, we affirm the examiner's decision rejecting claims 39, 40, 49, 52, 54, 56 through 59 and 66 under

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35 U.S.C. § 103.

We turn next to the examiner's rejection of claims 41 and 60 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Bradley, Shiraki, Asao and Martin. The examiner takes the position (Answer, page 6) that:

It would have been obvious to one of ordinary skill in the art to have further modified the method of the references as combined by also subjecting the films to ozone in addition to corona discharge as taught by Martin et al. for surface treating polymers for bonding, [u]sing corona with or without ozone would have been obvious to one of ordinary skill in the art for activating the films for bonding as taught by Martin et al.

The appellants do not challenge the examiner's position.<sup>5</sup> See the Brief, pages 14-15. Rather, the appellants only argue that Martin does not remedy the deficiencies of Bradley, Shiraki and Asao. *Id.* Accordingly, we affirm the examiner's decision rejecting claims 41 and 60 under 35 U.S.C. § 103 for the reasons indicated *supra*.

We turn next to the examiner's rejection of claims 50, 51, 53 through 55, 57, 66 through 71 and 73 through 75 under 35 U.S.C. § 103 as unpatentable over the combined disclosures of

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<sup>5</sup> The appellants also acknowledge that claims 41 and 60 stand or fall together with claim 39. See the Brief, page 7.

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Bradley, Shiraki, Asao and Take.<sup>6</sup> We find that Take employs heat and pressure to unite, *inter alia*, a paper coated with a low density polyethylene film, a polyethylene terephthalate film deposited with a thick silicon oxide layer (by plasma or vacuum deposition (non-chemical activation)), and a low density polyethylene film extruded and subjected to a corona discharge treatment (thermoadhesive resin film) to form a laminate. See column 9, lines 30-65, together with column 4, lines 44-54, column 5, lines 3-5, 23-62, column 6, lines 40-50 and column 7, lines 10-21. The corona discharge treatment is said to improve adhesion between the polyethylene terephthalate film and the polyethylene film. See column 5, lines 31-38.

We recognize that Take is silent as to the temperature at which the polyethylene film is extruded. See Take in its entirety. However, we find that Asao teaches the importance of using a polyethylene film extruded from a mixture of high and low density polyethylenes at the claimed temperature, i.e., 280-320°C. See page 4. This extruded polyethylene film is

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<sup>6</sup> For purposes of this rejection, the appellants state that claims 50, 51, 53-55, 57, 66, 69-71 and 73-75 stand or fall together with claim 39. See the Brief, page 7. The appellants state that only claims 67 and 68 should be separately considered based on their own merits. *Id.*

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preferred over a low density polyethylene film "for use with a requirement for high heat resistance." See pages 2 and 3.

Given these teachings, we determine that one of ordinary skill in the art would have been led to employ the polyethylene film taught by Asao, in lieu of a low density polyethylene film, motivated by a reasonable expectation of successfully forming a laminate useful for packaging hot items.

Accordingly, we affirm the examiner's decision rejecting claims 50, 51, 53 through 55, 57, 66, 69 through 71 and 73 through 75 under 35 U.S.C. § 103. However, since our reasons for affirming this rejection are materially different from those proffered by the examiner (we rely on Take and Asao only), we denominate our affirmance as including a new ground of rejection pursuant to 37 CFR § 1.196(b).

In addition to affirming the examiner's rejection of one or more claims, this decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b). 37 CFR § 1.196(b) provides that "[a] new ground of rejection shall not be considered final for purposes of judicial review."

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Regarding any affirmed rejection, 37 CFR § 1.197(b)  
provides:

(b) Appellants may file a single request for rehearing within two months from the date of the original decision . . . .

37 CFR § 1.196(b) also provides that the appellants, *WITHIN TWO MONTHS FROM THE DATE OF THE DECISION*, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of proceedings (37 CFR § 1.197(c)) as to the rejected claims:

(1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner . . . .

(2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record . . . .

Should the appellants elect to prosecute further before the Primary Examiner pursuant to 37 CFR § 1.196(b)(1), in order to preserve the right to seek review under 35 U.S.C. §§ 141 or 145 with respect to the affirmed rejection, the effective date of the

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affirmance is deferred until conclusion of the prosecution before the examiner unless, as a mere incident to the limited prosecution, the affirmed rejection is overcome.

If the appellants elect prosecution before the examiner and this does not result in allowance of the application, abandonment or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final action on the affirmed rejection, including any timely request for rehearing thereof.

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

*AFFIRMED-37 CFR § 1.196(b)*

CHUNG K. PAK	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
ROMULO H. DELMENDO	)	APPEALS AND
Administrative Patent Judge	)	INTERFERENCES
	)	
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JEFFREY T. SMITH	)	
Administrative Patent Judge	)	

CKP:hh

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