THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 39

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte EDWARD J. DALGEWICZ, III,
JOHN BOND and
RICHARD FREUNDLICH

Appeal No. 96-1971
Application 07/914,388[1]

HEARD: JULY 15, 1999

Before CAROFF, JOHN D. SMITH and LIEBERMAN, Administrative Patent Judges.

LIEBERMAN, Administrative Patent Judge.

[1] Application for patent filed July 17, 1992. According to appellants, this application is a continuation of Application 07/903,076, filed June 22, 1992, now abandoned; which is a continuation-in-part of Application 07/863,204, filed April 3, 1992; which is a continuation of Application 07/829,478, filed February 3, 1992, now abandoned.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 1 through 3, 5 through 22, 24 through 28, 70, 71, 74 and 75[2].

THE INVENTION

Appellants' invention is directed to a drawing thermoforming process wherein crystallizable polyester and an impact modifier are heated to a temperature above the melting point of the polyester resulting in the polyester being in a substantially amorphous molten state. The polyester is maintained in amorphous state while impact modifier is dissolved in the polyester. Cooling occurs thereafter with the impact modifier forming a precipitate of particles in a matrix of crystallized polyester, the precipitate having a particles size of from about 0.1 to 10 microns in diameter. Cooling thereafter continues with the polyester/impact modifier composition in contact with a surface at a specific cooling rate. Specific oxygen permeability properties are required by the claimed subject matter.

THE CLAIMS

Claim 1 is illustrative of appellants' invention and is reproduced below.

1. A drawing thermoforming process for producing a dimensionally-stable, impact-modified polyester with improved low temperature impact strength and improved gas barrier properties comprising the steps:

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[2]An amendment received after the hearing withdrew the appeal of claims 30, 32 through 51, 53 through 68, 72, 73, 76 and 77.

a) heating a composition comprising a crystallizable polyester and an impact modifier to a temperature above the melting point temperature of the polyester for a time sufficient to bring said polyester to a substantially amorphous molten state;

b) maintaining the composition heated in step (a) at a temperature above said melting point temperature for a time sufficient to substantially eliminate previous molecular stress imprinting and until an effective amount of said impact modifier is dissolved in said polyester;

(c) controlling cooling of the composition in step (b) at a rate of from about 1^{O}C to about 89^{O}C per minute until there is crystallization of the polyester and impact modifier forming a mixture of precipitated particles of impact modifier embedded in a matrix of the polyester, said precipitate of the impact modifier having a particle size of from about 0.1 to about 10 microns in diameter; and

d) continuing controlled cooling of the composition by contacting the composition to a surface capable of imparting shape for from about 1 second to about 5 minutes, said contact surface being at a temperature of at least the lower boundary crystallization from melt temperature of said polyester

to provide an impact modified polyester, wherein said impact modified polyester has an oxygen permeability of from about 0.2 to about 4.0 cc-mil/100 in^2-24 hr-atm at 23^{O}C and 60% relative humidity outside/100% relative humidity inside and a heat of recrystallization of from about 0 to about -4.0 calories per gram as measured by differential scanning calorimetry at a heating rate of about 25^{0} C/minute.

THE REFERENCES OF RECORD

As evidence of obviousness, the examiner relies upon the following references.

Jones et al. (Jones)	3,562,200	Feb. 9, 1971
Duffield et al. (Duffield)	4,061,706	Dec. 6, 1977
Carson	4,713,268	Dec. 15, 1987

THE REJECTIONS

Claims 1 through 3, 5 through 22, 24 through 28, 70, 71, 74, and 75 stand rejected under 35

U.S.C. § 103 as being unpatentable over Duffield in view of Jones and Carson.

OPINION

We have carefully considered all of the arguments advanced by appellants and the examiner and agree with appellants that the aforementioned rejection is not well founded. Accordingly, we will not sustain the rejection.

"[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a prima facie case of unpatentability." See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The examiner relies upon a combination of three references to teach the claimed subject matter of appellant. Duffield is relied upon by the examiner for disclosing a thermoforming process. As stated by the examiner, "Duffield differs from the claims by not showing the specific formulations of the claims." See Answer, page 4. However, our analysis of the claimed subject matter is that the difference between Duffield and the process at issue is more fundamental than the substitution of a different formulation. The claimed process requires that, "an effective amount of said impact modifier is dissolved in said polyester." Furthermore, there is a requirement that, "crystallization of the polyester and impact modifier," occur. One additional requirement present in the claimed subject matter sets forth specific oxygen permeability properties acquired as a result of the claimed process. None of these limitations are disclosed or suggested by either Jones or Carson.

We find that Jones teaches, "poly(ethylene terephthalate) having dispersed therein discrete

particles of an amorphous or poorly crystalline high molecular weight copolymer of ethylene." See column 1, lines 47 - 51. Moreover, the copolymer, "must be substantially insoluble in that polymer." See column 3, lines 5- 6. In contrast, the claimed process requires both solution of the impact modifier in the polyester and crystallization of the impact modifier. We find that Jones fails to disclose dissolution of the impact modifier in the polyester or the crystallization of the impact modifier. Finally, we find no suggestion in Jones that the molded product obtained as a result of his process has the oxygen permeability characteristics required by the claimed subject matter.

Carson has similar deficiencies. Patentee discloses a high impact composition containing a polyester and a core/shell additive. The components are blended, "using conventional melt blend techniques." See column 3, line 62. Thereafter an amorphous sheet is formed by, "immediately quenching the sheet to a temperature below about 75° C to fix the sheet in the amorphous state." See column 4, lines 6-7. We find that Carson teaches neither dissolution of the impact modifier, nor crystallization of either components as required by the claimed process. Furthermore, there is no suggestion in Carson that the molded product obtained as a result of his process has the oxygen permeability characteristics required by the claimed subject matter.

Finally, the examiner must show reasons that the skilled artisan confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. We determine that there is

no reason, suggestion, or motivation to combine the references in the manner proposed by the examiner. Accordingly, the examiner has not established a prima facie case of obviousness. See In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998) .

Based upon the above considerations, the use of the formulations of either Carson or Jones fails to satisfy the requirement of appellant's claimed subject matter. Consequently, we do not sustain the rejection under 35 U.S.C. § 103.

Since no prima facie case of obviousness has been established, we need not address the experimental results relied upon by appellants. See Brief, pages 15 - 20. See In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

DECISION

The rejection of claims 1 through 3, 5 through 22, 24 through 28, 70, 71, 74, and 75 under 35 U.S.C. § 103 as being unpatentable over Duffield in view of Jones and Carson is reversed.

The decision of the examiner is reversed.

REVERSED

MARC L. CAROFF Administrative Patent Judge	)	
JOHN D. SMITH Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
PAUL LIEBERMAN Administrative Patent Judge	)	

MLC/dal

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