

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JUSTIN L. HARRIS, SHAWN R. KENNEDY,
JIANXIN J. KUANG, MARK HANES,
WILLIAM W. POTTER, NATHAN E. STACEY, LEE A. CARVELL,
TIMOTHY E. RIGDON, and LARRY L. NASH

Appeal 2006-2497
Application 10/317,491
Technology Center 1700

Decided: November 8, 2007

Before THOMAS A. WALTZ, PETER F. KRATZ, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

WALTZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Primary Examiner's final rejection of claims 1-5, 8-14, 21, 25, 37, and 39-41, which are the only claims pending in this application. We have jurisdiction pursuant to 35 U.S.C. § 6(b).

According to Appellants, the invention is directed to a method for making tubing including the steps of preparing at least one triple-tapered block copolymer comprising at least one monovinyl aromatic monomer,

conjugated diene, and coupling agent, and using a machine to produce a hollow tube from the copolymer without using an external plasticizer, where the walls of the tube do not collapse when a length of the tube that is 10 times as long as the outer diameter of the tube is placed in a circular shape with opposite ends of the tube abutting (Br. 2-3). Independent claim 1 is illustrative of the invention and a copy of this claim is reproduced below:

1. A method for making tubing, comprising:

preparing a material which comprises at least one triple-tapered block copolymer comprising (i) at least one monovinyl aromatic monomer, (ii) at least one conjugated diene, and (iii) at least one coupling agent, wherein the triple-tapered block copolymer comprises at least 70% by weight of styrene; and

producing a hollow tube having flexible walls and an outer diameter with the material from a machine without using an external plasticizer;

wherein the walls of the tube do not collapse when a length of the tube that is 10 times as long as the outer diameter of the tube is placed in a circular shape with opposite ends of the tube abutting.

The Examiner has relied on the following prior art references as evidence of obviousness:

Wilson	US 4,067,942	Jan. 10, 1978
Moczygembba	US 5,399,628	Mar. 21, 1995
Stacy	EP 0 761 704 A1	Mar. 12, 1997 ¹
Donald	US 2003/0144418 A1	Jul. 31, 2003 ²

¹ Although the correct name for this reference is “DePorter,” we will refer to and cite from this reference as “Stacy” since both Appellants and the Examiner have used this nomenclature throughout the prosecution (Br. 5, n. 1; Answer 2, n. 1).

ISSUES ON APPEAL

Claims 1-5 and 8-14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Moczygemb^a in view of Stacy, alone or further in view of Donald (Answer 2).

Claims 21, 25, 37, and 39-41 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Moczygemb^a in view of Stacy and Wilson, alone or further in view of Donald (Answer 3).

Appellants contend that Moczygemb^a does not suggest the use of triple-tapered block copolymer in making tubing, nor does this reference recognize any advantages for this copolymer (Br. 4-5).

Appellants contend that Stacy does not suggest triple-tapered block copolymers can be used to make tubing, nor does this reference teach the desirable flexibility or kink resistance needed for tubing, but only teaches properties such as hardness and stiffness that would not be desired for tubing (Br. 5-6).

Appellants contend that there is no motivation to combine Stacy with Moczygemb^a (Br. 6-7).

Finally, Appellants contend that the non-obviousness of claim 1 is demonstrated by the Wilkey Declaration under 37 C.F.R. § 1.132, a copy of which is attached in the Evidence Appendix to the Brief (Br. 7-8).

² The Examiner additionally lists Young, “*Introduction to Polymers*,” 70-71, Chapman and Hall, 1983, as “Evidence Relied Upon” (Answer 2). However, this reference has not been recited in the statement of any rejection (Answer 2 and 3) but discussed in the “Response to Argument” (Answer 7, n. 3). Therefore, we do *not* consider Young in our review of the rejections on appeal. See *In re Hoch*, 428 F.2d 1341, 1342 n.3 (CCPA 1970); and *Ex parte Raske*, 28 USPQ2d 1304, 1304-05 (BPAI 1993).

The Examiner contends that Moczygembba teaches the basic claimed process using a polymodal tapered block copolymer without a plasticizer, exemplifying a copolymer with at least two random tapered blocks having at least 70% styrene, while further teaching that a tube can be formed from these block copolymers (Answer 2-3).

The Examiner contends that Stacy teaches a triple-tapered block copolymer made from the same components as those taught by Moczygembba that is useful in articles prepared by extrusion (Answer 3 and 6).

The Examiner contends that the Wilkey Declaration is not persuasive of unobviousness since the results shown are not unexpected (Answer 6-7).

Accordingly, we determine that the issues presented from the record in this appeal are as follows: (1) Does the combination of Moczygembba and Stacy render obvious the claimed subject matter, and has the Examiner identified a sufficient reason to combine these references?; and (2) if a prima facie case of obviousness has been established by the Examiner, does the Wilkey Declaration show unexpected results that rebut this prima facie case?

We determine that the Examiner has established a prima facie case of obviousness in view of the reference evidence, which prima facie case has not been adequately rebutted by Appellants' evidence (the Wilkey Declaration) and arguments. Accordingly, we AFFIRM all grounds of rejection presented in this appeal essentially for the reasons stated in the Answer, as well as those reasons set forth below.

OPINION

We determine the following factual findings from the record presented in this appeal:

- (1) Moczygembba discloses a polymodal block copolymer of at least one conjugated diene with at least one monovinylarene, having *at least two* random-tapered blocks when prepared with a coupling agent, where copolymers with two tapered blocks are exemplified (col. 2, ll. 35-41, emphasis added; col. 11, ll. 18-33);
- (2) Moczygembba teaches that the preferred monovinylarene is styrene present in an amount of preferably 65 to 85 weight percent, with examples of 75% (col. 2, ll. 42-47; col. 3, ll. 25-26; col. 15, ll. 26-27; and col. 18, ll. 30-31);
- (3) Moczygembba teaches that there is a need for these types of polymers for use in a method of forming tubes (col. 1, ll. 13-28);
- (4) Moczygembba teaches that the resultant copolymers have minimal blueness, good impact strength, good stress crack resistance, and good flexural modulus (col. 8, ll. 50-55); and
- (5) Stacy discloses a block copolymer with at least three consecutive conjugated diene/monovinylarene tapered blocks useful for making articles formed by extrusion, where these articles have properties of low blueness, good clarity, hardness, stiffness, ductility, and high impact strength (2:1-27, 55-56; 6:44-54; 7:12-13; and 8:14-16).³

Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level

³ Appellants do not contest or dispute the Examiner's factual findings from Donald and Wilson (Br. 6, 8-9, respectively). Therefore, we do not recite these factual findings here but adopt the Examiner's factual findings and conclusions of law with regard to these references (Answer 3-4).

of ordinary skill in the art; and (4) secondary considerations such as evidence of unexpected results. *See Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). “[A]nalysis [of whether the subject matter of a claim is obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740-41 (2007), quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). The mere recitation of a newly-discovered function or property, inherently possessed by the prior art, does not cause a claim drawn to that function or property to distinguish over the prior art. *See In re Best*, 562 F.2d 1252, 1255 (CCPA 1977).

Applying the preceding legal principles to the factual findings in the record of this appeal, we determine that the Examiner has established a prima facie case of obviousness. As shown by factual findings (1) and (2) listed above, we determine that Moczygembra discloses generically the material used in the method of claim 1 on appeal for making tubes (“at least two” encompasses triple-tapered blocks or more). As shown by factual finding (3) listed above, we determine that Moczygembra would have suggested to one of ordinary skill in the art the use of the disclosed copolymers as materials for making a tube. As shown by factual findings (4) and (5) listed above, we determine that Stacy evinces that triple-tapered block copolymers of the same monomers as taught by Moczygembra were known in the art, and had desirable properties similar to those of Moczygembra. Accordingly, we determine that it would have been obvious to one of ordinary skill in the art to use well known triple-tapered block copolymers to make tubes. As admitted by the Examiner (Answer 3), the

combined reference disclosures do not positively recite the kink resistance test results as required by claim 1 on appeal. However, we determine that the use of similar monomers and coupling agents in a similar process for making tapered block copolymers useful for producing tubes in the applied prior art would have resulted in the same or similar properties as those claimed. *See In re Best, supra.*

When *prima facie* obviousness has been established, we must begin our consideration anew and consider the evidence of obviousness against the evidence of non-obviousness (such as the Wilkey Declaration). *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). The burden rests with Appellants to establish that the results are unexpected, based on comparisons with the closest prior art, and commensurate in scope with the claimed subject matter. *See In re Klosak*, 455 F.2d 1077, 1080 (CCPA 1972); *Ex parte Gelles*, 22 USPQ2d 1318, 1319 (BPAI 1992). We determine that Appellants have not met this burden. We determine that Appellants' evidence of non-obviousness is insufficient to overcome the rejections for the following reasons. The Wilkey Declaration purports to compare the only exemplified copolymer disclosed by Moczygemba (a double-tapered styrene-butadiene copolymer) with a triple-tapered styrene-butadiene copolymer in accordance with claim 1 on appeal (Br. 7-8). However, we determine that the results of this comparison are not truly comparable. To be truly comparable, experiments should have only one variable. The experiments presented on page 2 of the Wilkey Declaration have a welter of unfixed variables, and thus no true comparison of results is possible. *See In re Dunn*, 349 F.2d 433, 439 (CCPA 1965). The experiments shown on page 2 of the Wilkey Declaration have different amounts of randomizer (THF),

initiator, styrene, butadiene, and coupling agent for the example according to Moczygembba as compared to the example of the claimed invention.

Furthermore, the tubing is made differently for the Moczygembba example as compared to the example representing claim 1. In other words, the outside diameter, inside diameter, and wall thickness also vary between the compared examples. As taught by Appellants' own Specification, the kink resistance "is generally a product of factors including tube diameter, wall thickness, and radius of curvature" (Specification 2, ¶ [0007]).

We also note that the results have not been shown by Declarant or Appellants to be commensurate in scope with the subject matter sought to be patented. *See In re Dill*, 604 F.2d 1356, 1361 (CCPA 1979). Appellants have not explained why the showing of one specific triple-tapered block copolymer made from specific amounts of monomers, a coupling agent, an initiator, and a randomizer, is commensurate with the scope of claim 1 on appeal, which is not so limited.

We also note that Declarant has not stated that the comparative results are "unexpected" (*see* the Wilkey Declaration 3). Appellants have not rebutted the Examiner's reasoning that the results are merely to be expected (Answer 6-7).

Based on the totality of the record, including due consideration of Appellants' evidence and arguments, we determine that the preponderance of evidence weighs most heavily in favor of obviousness. Accordingly, we affirm all grounds of rejection presented in this appeal for the reasons stated in the Answer and above. The decision of the Examiner is affirmed.

Appeal 2006-2497
Application 10/317,491

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

PL/LP Initials

sld/ls

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