

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* ROBERT BRUNNER, MICHAEL HAISCH,  
and ULRICH NAEGELE

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Appeal 2009-001593  
Application 11/010,906  
Technology Center 1700

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Decided:<sup>1</sup> June 30, 2009

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Before JEFFREY T. SMITH, LINDA M. GAUDETTE, and  
KAREN M. HASTINGS, *Administrative Patent Judges*.

HASTINGS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from a final rejection of claims 1-16. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on the page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

Appellants' invention is a polymer composition useful as an adhesive (Spec. 1:5-10). Representative claim 1 reads as follows:

1. A block copolymer composition comprising:

a. a tetra-branched block copolymer (IV) represented by the general formula  $(A-B)_4X$ ;

b. a tri-branched block copolymer (III) represented by the general formula  $(A-B)_3X$ ;

c. a di-branched block copolymer (II) represented by the general formula  $(A-B)_2X$ ; and

d. a linear diblock copolymer (I) represented by the general formula A-B; where:

i. A represents a polymer block of a mono alkenyl arene;

ii. B represents a polymer block of a mixture of isoprene and 1,3-butadiene having a random distribution in a weight ratio of isoprene to butadiene from 70:30 to 40:60;

iii. X represents the residue of a multi-functional coupling agent selected from silicon halides, siloxanes, epoxy alkoxysilanes, esters of monohydric alcohols with carboxylic acids, epoxidized oils, epoxides and divinylaromatics;

iv. the weight percent of A blocks is from 14% to 22%;

v. the relative amounts of copolymers IV, III, II, and I are from 0 to 20 weight percent IV, from 50 to 80 weight percent III, from 0 to 20 weight percent II and from 20 to 50 weight percent I, where the total of I, II, III and IV equals 100 weight percent; and

vi. the melt flow rate of the polymer composition is at least 2.0

g/10 minutes at 200°C/5kg as measured by ASTM D1238 (D condition).

The Examiner rejected claims 1-16 under 35 U.S.C. § 103(a) as unpatentable over Asahara<sup>2</sup> in view of Halasa<sup>3</sup> or Rodgers<sup>4</sup>. The Examiner alternatively rejected claims 1-16 under 35 U.S.C. § 103(a) as unpatentable over Asahara in view of Halasa or Rodgers, further in view of Spence<sup>5</sup> and Diehl.<sup>6</sup>

### ISSUE

The issue before us is whether Appellants have shown that the Examiner reversibly erred in rejecting the claims under 35 U.S.C. § 103(a). The issue turns on whether Asahara and the other cited prior art teach or suggest “a random distribution of isoprene and 1,3-butadiene and that the weight ratio of isoprene to butadiene is from 70:30 to 40:60” as required in claim 1.

We answer this question in the affirmative.

### PRINCIPLES OF LAW

The Examiner bears the initial burden of presenting a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). In order to establish a prima facie case of obviousness, the Examiner must show that each and every limitation of the claim is described or suggested by the prior art or would have been obvious based on the knowledge of

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<sup>2</sup> EP 669,350 A1 published Aug. 30, 1995 or US 5,532,319 published July 6, 1996. It is undisputed that these are equivalent documents (App. Br. 3, 13; Ans. 8). They will be collectively referred to as Asahara. All references herein will be made to pages of EP 669,350.

<sup>3</sup> US 5,239,009, published Aug. 24, 1993

<sup>4</sup> US 5,272,220, published Dec. 21, 1993

<sup>5</sup> US 5,552,493, published Sep. 3, 1996

<sup>6</sup> US 5,372,870, published Dec. 13, 1994

those of ordinary skill in the art. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988)). “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (*quoted with approval in KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)).

The mere fact that the prior art could be modified as proposed by the Examiner is not sufficient to establish a prima facie case of obviousness. *See In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992). The Examiner must explain why the prior art would have suggested to one of ordinary skill in the art the desirability of the modification. *See id.*

#### ANALYSIS and FACTUAL FINDINGS

We need only discuss independent claim 1.

The Examiner correctly found that claim 1 encompasses compositions wherein the amount of the tetra-branched block copolymer (IV) and the di-branched block copolymer (II) may be 0% (Ans. 3, 4).

The Examiner also correctly found that Asahara teaches a block copolymer composition for a pressure sensitive adhesive with 20-90 wt.% of a tri-block copolymer of the formula  $(S-I-B)_nX$  wherein "n" is an integer of 2-4 and X is a residue of a bi-tri- or tetrafunctional coupling agent, and 80-10 wt.% of a linear block copolymer (S-I-B) (Asahara, p. 5, ll. 37-40; Ans. 3, 4).

The Examiner relies upon Halasa or Rodgers to illustrate that polymers comprising styrene, isoprene, and butadiene for use in tire treads may be processed to obtain the monomers in a random order or distribution (Ans. 6; Halasa, e.g., col. 2, ll. 16-21; col. 8, ll. 31-34; Rodgers, e.g., col. 8, ll. 10-16).

The Examiner admits that Asahara does not explicitly teach a random distribution of B blocks having a random distribution of isoprene and 1,3-butadiene with the weight ratio of isoprene to butadiene from 70:30 to 40:60 (*see generally* Ans.). The Examiner nonetheless concludes that this would have been obvious, since it would have been obvious “to use a process condition for making a random order distribution [in Asahara] . . . because the present claimed invention is a composition that can be produced by a method suggested in Halasa invention or Rodgers” (Ans. 7).

Appellants contend that the rejection is not proper because Asahara does not teach or suggest “a random distribution of isoprene and 1,3-butadiene and that the weight ratio of isoprene to butadiene is from 70:30 to 40:60” as required in claim 1 (App. Br. 4, emphasis in original; see also, Reply Br. 2-4), and none of the other references applied by the Examiner correct this deficiency (*see generally* App. Br., Reply Br.). We agree.

The Examiner has not established that the B blocks have a random distribution of isoprene and 1,3-butadiene in the claimed weight ratio of 70:30 to 40:60 in Asahara, nor how Halasa or Rodgers reasonably teach or suggest modifying Asahara to result in such a limitation. The mere fact that Asahara *could* be modified to “use a process condition for making a random order distribution . . . because the present claimed invention is a composition that *can* be produced by a method suggested in Halasa or Rodgers” as stated by the Examiner (Ans. 7; emphasis added) is not sufficient. *See Fritch*, 972 F.2d at 1266.

The Examiner has not explained how the claimed random distribution of isoprene and 1,3-butadiene in the claimed weight ratio of 70:30 to 40:60 would have been obtained. The Examiner points out that Asahara describes that the proportion of bound vinyl is 10 to 50 wt.%, bound butadiene is 10-

60% and bound isoprene is 25-55 wt.% (Asahara, p. 4, ll. 49-52; Ans. 4). However, the Examiner does not explain how these teachings in combination with Halasa or Rodgers would have suggested the polymer block of isoprene and 1,3-butadiene having the claimed random distribution in the claimed weight ratio of 70:30 to 40:60. Accordingly, the Examiner has not provided any persuasive reasons why such a combination would have resulted in the claimed invention.

Thus, the Examiner has not met the initial burden of establishing that one would have been motivated to modify Asahara to provide a random distribution of isoprene and butadiene in the weight ratio as claimed.

We are constrained by these circumstances to reverse the Examiner's rejection under 35 U.S.C. § 103 based on Asahara with Halasa or Rodgers.

The Examiner relied on Spence and Diehl to respectively address the obviousness of the coupling agent recited in dependent claim 9 and the claimed melt flow rate of claim 1. The Examiner did not rely upon these references to teach or suggest the random distribution of isoprene and 1-3-butadiene in the weight ratio as claimed. Thus, the addition of these references does not address the distinction between the claimed invention and the invention of Asahara with Halasa or Rodgers as discussed above. Therefore, we must also reverse the Examiner's rejection that relies upon the combination of Asahara with Halasa or Rodgers, further with Spence and Diehl.

#### CONCLUSION/ORDER

The decision of the Examiner rejecting claims 1-16 as being unpatentable under 35 U.S.C. § 103(a) over the combined teachings of Asahara with Halasa or Rodgers, alternatively further in view of Spence and Diehl, is reversed.

The Examiner's decision to reject the appealed claims is reversed.

REVERSED

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