

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 HIROSHI SHIHO,
TAKAHIRO OKAMOTO,
KOU HASEGAWA and
NOBUO KAWAHASHI

Appeal 2007-0824
Application 10/829,936
Technology Center 1700

Decided: February 14, 2007

Before EDWARD C. KIMLIN, CATHERINE Q. TIMM, and JEFFREY T. SMITH, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-3, 5, 6, 9, and 11.

Claims 4, 7, and 10, the other claims remaining in the present application,

Appeal 2007-0824
Application 10/829,936

stand withdrawn from consideration as being directed to a non-elected invention. Claim 1 is illustrative:

1. A polishing pad comprising 70 to 99.9 mass% of (A) a crosslinked diene elastomer and 0.1 to 30 mass% of (B) a polymer having an acid anhydride structure and an acid value of 1 to 300 mg KOH/g., based on 100 mass% of the total of the components (A) and (B), wherein said polishing pad has a specific gravity of 0.9 to 1.2.

The Examiner relies upon the following reference as evidence of obviousness:

Hasegawa US 6,645,264 B2 Nov. 11, 2003

Appellants' claimed invention is directed to a polishing pad comprising (A) a cross-linked diene elastomer and (B) a polymer having an acid anhydride structure.

Appealed claims 1-3, 5, 6, 9, and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hasegawa.

Appellants do not present separate arguments for any particular claim on appeal. Accordingly, all the appealed claims stand or fall together with claim 1.

We have thoroughly reviewed each of Appellants' arguments for patentability as well as the Specification and declaration evidence relied upon in support thereof. However, we are in complete agreement with the Examiner's reasoned analysis and application of the prior art, as well as her cogent and thorough disposition of the arguments raised by Appellants. Accordingly, we will adopt the Examiner's reasoning as our own in sustaining the rejection of record, and we add the following for emphasis only.

There is no dispute that Hasegawa, like Appellants, discloses a polishing pad that may comprise the presently claimed cross-linked diene elastomer and a polymer having an acid anhydride structure in amounts that fall within the claimed ranges, namely, 70 to 99.9 mass% and 0.1 to 30 mass%, respectively. Also, Appellants acknowledge that Hasegawa "is an example of a polishing pad which also discloses the importance of removal rate and durability as polishing pad properties." (page 4 of principal Brief, first sentence). The principal contention of Appellants is that component (B) of Hasegawa need not be a polymer having an acid anhydride structure but, rather, can be "a water-insoluble substance having at least one functional group selected from the group consisting of carboxyl, amino, hydroxyl, epoxy, sulfonic acid, and phosphoric acid groups" in an amount within the range of 0.1 to 60 wt % (page 4 of principal Brief, second sentence). Appellants point out that Hasegawa discloses only one example, Example 2, in which component (B) contains an acidic group.

We are not persuaded by Appellants' argument because, although it is true that component (B) of Hasegawa is not necessarily a polymer having acid anhydride structure, the Examiner promptly explains that Hasegawa teaches that component (B) is preferably a polymer, and the reference specifically names modified polymers such as maleic anhydride-modified polyethylene and maleic anhydride-modified polypropylene (col. 3, ll. 31-32). Also, while Hasegawa discloses that the amount of component (B) is preferably 0.1 to 60 wt %, the reference expressly teaches that the amount is "even more preferably 0.5 to 30 wt %" (col. 5, ll. 41-42). Hence, the most preferable range of the three ranges disclosed by Hasegawa nearly coincides with the claimed range of 0.1 to 30 mass%. Accordingly, we find that

Hasegawa establishes a substantial case of *prima facie* obviousness for the claimed polishing pad.

Appellants rely upon comparative data in the Specification and declaration as evidence of nonobviousness. However, we concur with the Examiner that Appellants' evidence of nonobviousness does not outweigh the evidence of obviousness represented by Hasegawa. Like the Examiner, we find that Appellants' comparative data is not commensurate in scope with the degree of protection sought by the appealed claims and does not represent a comparison with the closest prior art. While Comparative Examples 2 and 3 of the present Specification are fairly representative of Hasegawa's Examples 1 and 2, the Examiner correctly points out that Comparative Examples 2 and 3 have different amounts of components (A) and (B) than Examples 1 and 2 of the present invention. For instance, Comparative Example 2 comprises 99 % (A) and 1% (B) whereas Appellants' Example 1 comprises 90% (A) and 10% (B). Similarly, Comparative Example 3 comprises 98% (A) and 2% (B) whereas Appellants' Example 2 comprises 70% (A) and 30% B). Hence, without the amounts of the components being held constant, the effect of using Appellants' component (B) instead of Hasegawa's (B) cannot be fairly determined. Also, another variable introduced by Appellants' data is the amount of component (c), i.e., beta-cyclodextrane. Comparative Example 2 comprises 30 vol. % of component (c) whereas Appellants' Example 1 has 5 vol. %. Likewise, Comparative Example (3) and Appellants' Example 2 employ 30 vol. % and 20 vol. % of component (c), respectively. Consequently, amidst this welter of unfixed variables, the probative value of

Appellants' evidence of nonobviousness is limited. *In re Dunn*, 349 F.2d 433, 439, 146 USPQ 479, 483-84 (CCPA 1965).

Appellants also offer the declaration of one of the inventors for demonstrating the superior durability of a polishing pad comprising component (B) in an amount within the claimed range compared to Comparative Example 4 having 35 mass% of maleic anhydride modified polypropylene. However, as explained by the Examiner, this comparison suffers the same fate as Appellants' Specification data due to the presence of unfixed variables. For instance, Comparative Example 4, comprising 35% component (B), cannot be fairly compared to Appellants' Example 2 comprising 30 mass% component (B) because the components are not the same polymer, i.e., comparative Example 4 comprises maleic anhydride modified polypropylene whereas Appellants' Example 2 comprises maleic anhydride modified styrene-butadiene-styrene block copolymer. Moreover, we totally agree with the Examiner that the results of the declaration are hardly unexpected inasmuch as Hasegawa's most preferred amount for component (B) is nearly identical to the claimed range. Examples 1 and 2 of Hasegawa comprise only 1 and 2% of component (B), respectively, and appellants' declaration is conspicuously silent with respect to the results being unexpected. It is fundamental that Appellants must establish that the comparative results are not just different, but truly unexpected. *In re Merck & Co.*, 800 F.2d 1091, 1099, 231 USPQ 375, 381 (Fed. Cir. 1986).

Appellants contend that while Hasegawa "does most prefer this maximum amount, no reasons are given why," and that one of ordinary skill in the art would not know that using component (B) in the claimed amounts affects durability. However, insofar as Appellants explicitly acknowledge

Appeal 2007-0824
Application 10/829,936

that Hasegawa "discloses the importance of removal rate and durability as polishing pad properties" (page 4 of principal Brief, first sentence), Appellants' argument is not well taken. Since Hasegawa admittedly discloses the importance of durability as a polishing pad property, we find that one of ordinary skill in the art would have reasonably expected that the reference disclosure of the most preferable amount of component (B) would result in the best durability. Moreover, the discovery of an additional advantage associated with a known or obvious invention does not, generally, impart patentability in the absence of unexpected results. As noted above, Appellants have not established unexpected results.

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(iv)(2004).

AFFIRMED

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OBLON, SPIVAK, MCCLELLAND, MAIER &
NEUSTADT, P.C.
1940 Duke Street
Alexandria, VA 22314