

The opinion in support of the decision being entered today
not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte STEPHN W. BANY,
JAMES P. DIZIO,
PATRICIA J.A. BRANDT,
JANICE R. MANORE and
JUDITH A. GREEN

Appeal 2007-2144
Application 10/147,015
Technology Center 1700

Decided: September 25, 2007

Before EDWARD C. KIMLIN, CHUNG K. PAK, and PETER F. KRATZ,
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 final rejection of claims 1 through 7, 9 through 17, 19 through 23, 25, 26, and 28, all of the claims pending in the above-identified application. We have jurisdiction pursuant to 35 U.S.C. § 6.

STATEMENT OF THE CASE

The subject matter on appeal is directed to applying a particular release coating having low adhesion on a pressure sensitive adhesive backing layer comprising a fibrous material (Specification 2-6). According to page 6 of the Specification, examples of polymers used for this particular release coating

are described in U.S. Pat. Nos. 5,214,119 (Brandt et al.), 5,290,615 (Tushaus et al.), 5,461,134 (Leir et al.), and 5,512,650 (Leir et al.), and also European Pat No. 0 380 236 B1 (Leir).

A particular example of a thermoplastic silicone-containing polymer is a solvent-borne silicone polyurea, an example of which is disclosed in U.S. Pat. No. 5,512,650 (Leir et al.).

Another particular example of a thermoplastic silicone-containing polymer is a water-borne or water-dispersible silicone polyurea, an example of which is disclosed in EP Pat. No. 0 380 236 B1 (Leir).

This release coating allows a roll of tape to be unwound without the undesirable transfer of adhesive to the backing layer (Specification 1). Further details of the appealed subject matter are recited in representative claim 1¹ reproduced below:

1. An article comprising:

a porous substrate comprising a fibrous material, wherein greater than 75% of the fibers have a denier of less than 9; and

¹ The Appellants state that “[a]ll claims stand or fall together”(Br. 2).

a release coating disposed on the fibrous material of the porous substrate; wherein the release coating comprises a thermoplastic silicone-containing polymer comprising at least about 30% silicone segments and 1-5% carboxylic acid moieties, wherein the thermoplastic silicone-containing polymer is deposited out of a composition comprising water; and wherein the release coating is penetrated into no more than the top 20% of the fibrous material.

As evidence of unpatentability of the claimed subject matter, the Examiner has relied upon the following references:

Seth	US 6,129,964	Oct. 10, 2000
Leir	EP 0 380 236 A2	Jan. 8, 1990 ²

The Examiner has rejected claims 1 through 7, 9 through 17, 19 through 23, 25, 26, and 28 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Seth and Leir.

The Appellants appeal from the Examiner's decision rejecting the claims on appeal under 35 U.S.C. § 103(a).

ISSUES

1. Does substantial evidence support the Examiner's finding that the prior art relied upon would have taught or suggested using a pressure-sensitive adhesive backing layer containing the claimed fiber content within the meaning of 35 U.S.C. § 103(a)?

² Both the publication date and/or the teachings of EP 0 380 236 referred to in the Answer dated June 30, 2006 and the Final Office dated December 1, 2005 indicate that the Examiner has relied on EP 0380 236 A2.

2. Does substantial evidence support the Examiner's finding that one of ordinary skill in the art would have been led to employ the claimed release coating taught by Leir on Seth's pressure-sensitive adhesive backing layer within the meaning of 35 U.S.C. § 103(a)?

PRINCIPLES OF LAW, FACTS, and ANALYSES

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 of ordinary skill in the art; and (4) secondary consideration (e.g., unexpected results). *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18, 148 USPQ 459, 467(1966). “[A]nalysis [of whether the subject matter of a claim would be 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 Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740-741, 82 USPQ2d 1385, 1396 (2007) quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336-337 (Fed. Cir. 2006); *see also DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1361, 80 USPQ2d 1641, 1645 (Fed. Cir. 2006)(“The motivation need not be found in the references sought to be combined, but may be found in any number of sources, including common knowledge, the prior art as a whole, or the nature of the problem itself.”); *In re Bozek*, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969)(“Having established that this knowledge was in the art, the examiner could then properly rely, as put forth by the solicitor, on a

conclusion of obviousness ‘from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference.””).

Applying the above principles of law to the present situation, we determine that substantial evidence supports the Examiner’s finding that the prior art relied upon would have directed one of ordinary skill in the art to the claimed subject matter within the meaning of 35 U.S.C. § 103. As is apparent from the Brief, the Appellants do not dispute the Examiner’s finding that Seth teaches applying a release coating on a porous backing layer containing a fibrous material for a pressure-sensitive adhesive.

Compare Answer in its entirety with Br. and Reply Br. in their entirety. Rather, the Appellants contend that Seth does not teach or suggest greater than 75% of the fibers employed in forming the backing layer as having a denier of less than 9 (Br. 9-15). In support of this contention, the Appellants refer to Seth’s Comparative Example 3 which shows a release coating coated backing layer made of 100% 9 denier polypropylene fibers adhering too strongly to a pressure sensitive adhesive such that the adhesive becomes contaminated by the fibers of the backing layer (e.g., Br. 10).

Although Seth prefers a pressure-sensitive adhesive porous baking layer made of at least 25 percent by weight of fibers from 15 to 30 denier, the Examiner has correctly found that it does not preclude employing a pressure-sensitive adhesive porous backing layer having the claimed fiber content (Answer 3 and 7). Specifically, we observe that under the subheading “DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS,” Seth teaches that:

Preferably, this backing layer is a continuous film so as to also prevent adhesive migration from the adhesive layer into and through the nonwoven backing layer. This results in less contamination of the overlying non-woven pressure sensitive adhesive tape... and corresponding better adhesion to substrates to which this loop tape fastening material is subsequently applied. Generally, the nonwoven backing layer *should have* at least 25 percent by weight....of fibers from 15 to 50 denier, preferably 15 to 30 denier with the remainder comprising fibers less than 15 denier, preferably from 3 to 9 denier. [Emphasis added.]

Consistent with the above broad description of the preferred embodiments, Seth also claims a nonwoven backing layer containing an unspecified amount of 15 to 30 denier fibers (col. 7, ll. 35-43). Consequently, we concur with the Examiner that Seth's disclosure as a whole would have suggested to one of ordinary skill in the art to employ, *inter alia*, a nonwoven pressure-sensitive adhesive backing layer having the claimed fiber content (little less than 25 percent by weight of fibers from 15 to 30 denier and the remainder (greater than 75%) comprising 3 to 8.9999 denier). *In re Lamberti*, 545 F.2d 747, 750, 192 USPQ 278, 280 (CCPA 1976) ("[A]ll disclosures of the prior art, including unpreferred embodiments, must be considered."). Moreover, we note that at least one preferred fiber content of Seth's backing layer, i.e., at least 25% by weight of fibers from 15 to 30 denier and 75% or less by weight of fibers below 9 denier, is so close to the fiber content of the claimed backing layer that both the backing layers taught or suggested by Seth and recited in claim 1 are reasonably expected to have the same or similar properties. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985) (A prima facie case of obviousness

exists when the prior art and claimed ranges do not overlap but are close enough such that one skilled in the art would have reasonably expected to have the same properties.)

Given the above findings, we determine that substantial evidence supports the Examiner's finding that Seth teaches or would have suggested a porous backing layer containing the claimed fiber content. This is especially true in this case since Leir relied upon by the Examiner further teaches at page 9, ll. 19-30, that its release coating, unlike other release coatings, can provide desired adherence strengths, thereby suggesting the employment of the release coating taught by Leir to avoid the very problem associated with the strong adherence discussed in Seth.

The Appellants contend that Seth and Leir would not have suggested employing the claimed specific water dispersible polyorganosiloxane-polyurea block copolymer release coatings, i.e., thermoplastic silicon-containing polymers incapable of penetrating into more than the top 20% of the backing material (e.g., Br. 6-9 and Reply Br. 2). We do not agree.

As correctly found by the Examiner, Seth teaches employing conventional release coatings on the top surface of its pressure sensitive adhesive backing layer (Answer 3). Although Seth does not specify using the claimed specific water dispersible polyorganosiloxane-polyurea block copolymers as its release coating, there is no dispute that Leir teaches at page 5 such water dispersible organopolysiloxane polyurea block copolymers. *Compare* Answer 3 and Leir, p. 5, l. 4 to p. 6, l. 13, with Appellants' narrow claim 9. We find that Leir further teaches at page 7, ll. 1-7, and page 9, ll. 8-13 and 19-30, that:

The organopolysiloxane-polyurea block copolymers of this invention, useful as films or coatings, are prepared in and cast from solvents. However, for many applications, solvents cannot be tolerated for reasons of safety, toxicity, flammability and environmental reasons. Further, many applications for such films require water dispersibility. In one preferred embodiment of the invention, the block copolymers of the invention are rendered water soluble or water dispersible.

...

It has been discovered that these polymers are suitable for use as release coatings for a variety of pressure-sensitive adhesives. They have a high degree of difunctionality with little contamination from monofunctional or nonfunctional siloxane impurities, virtually eliminating re-adhesion problems. They have good stability in solution, are film-forming, and have unusually high strength plus desirable mechanical and elastomeric properties. In addition, they do not require high temperature curing or long processing time, a decided advantage in pressure-sensitive tape manufacturing.

...

As mentioned previously, the segmented copolymers of this invention may be prepared with a wide range of useful properties through variations in the ratio of soft segments to hard segments, the amount and nature of the chain extenders employed, and the molecular weight of the polysiloxane segment. These variations give rise to varying amounts of release, i.e., from 10g/cm or less, to about 350 g/cm. Certain copolymers are especially useful as low-adhesion backsizes (LABs) for removable pressure-sensitive adhesives such as masking tape.

Given the above teachings, we determine that substantial evidence supports the Examiner's finding that one of ordinary skill in the art would have been led to employ the claimed release coating as the release coating of

the pressure-sensitive adhesive backing layer of the type suggested in Seth, motivated by a reasonable expectation of successfully obtaining the advantages taught by Leir. Moreover, from the above teachings, one of ordinary skill in the art would have reasonably expected that the claimed release coating taught by Leir has the claimed minimal penetration property from the teachings of Leir discussed above (Leir teaches that its release coating has a high degree of difunctionality with little contamination from monofunctional or nonfunctional siloxane impurities and is film-forming).

See also KSR, 127 S. Ct. at 1739, 82 USPQ2d at 1395 (“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”). In any event, the desired penetration property is an additional advantage that would have naturally flowed from following the suggestion of Leir. *Ex parte Obiaya*, 227 USPQ 58, 60 (BPAI 1985) (holding that the recognition of another advantage flowing naturally from following the suggestion of the prior art cannot be the basis for patentability when the difference would otherwise be obvious),

Accordingly, based on the factual findings set forth in the Answer and above, we determine that that the preponderance of evidence weighs most heavily in favor obviousness within the meaning of 35 U.S.C. § 103.

ORDER

In view of the forgoing, the decision of the Examiner is affirmed.

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

AFFIRMED

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