

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

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SEIJI IZUTANI,
MICHIROU KAWANISHI, and
YUKIO ARIMITSU

Appeal 2007-1848
Application 10/131,178
Technology Center 1700

Decided: July 31, 2007

Before EDWARD C. KIMLIN, BRADLEY R. GARRIS, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

Statement of the Case

This is an appeal under 35 U.S.C. § 134 from a final rejection of claims 2, 3, 5 and 6. We have jurisdiction under 35 U.S.C. § 6.

Appellants' invention relates to a method of selectively releasing part of adherends by heating a thermally releasable pressure-sensitive adhesive

sheet having a thermally expandable layer containing therein thermo-expandable microspheres. Representative independent claim 5, as presented in the Brief, appears below:

5. A method for thermally releasing an adherend, which comprises the steps of:

cutting an adherend adhered to a thermally releasable pressure-sensitive adhesive sheet, into a plurality of cut pieces, the pressure sensitive adhesive sheet comprising a base material and a thermally expandable layer containing thermo-expandable microspheres, wherein the cutting is conducted without cutting the base material; and

selectively releasing the cut pieces by partly heating the plurality of cut pieces with a heating unit for partly heating the pressure-sensitive adhesive sheet.

The Examiner relies on the following references in rejecting the appealed subject matter:

Lu	US 5,827,394	Oct. 27, 1998
Kiuchi	EP 1 033 393 A2	Jun. 9, 2000
Tsujimoto	US 6,176,966 B1	Jan. 23, 2001

Claims 2, 3 and 5 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the admitted prior art (APA) in view of Tsujimoto and Lu; and claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art (APA) in view of Tsujimoto and Lu further in view of Kiuchi.

Appellants do not set forth separate substantive arguments against the separately rejected claim 6. Appellants rely solely upon the reasons presented in the discussion of claim 5 (*See* Brief 14). Accordingly, we will limit our consideration to the Examiner's rejection of claims 2, 3 and 5 over

Appeal 2007-1848
Application 10/131,178

the APA in view of Tsujimoto and Lu, which claims stand or fall together as a group.

We have thoroughly reviewed each of Appellants' arguments for patentability. However, we are convinced that the Examiner's rejection is supported by the prior art evidence relied upon and in accord with current patent jurisprudence. Accordingly, we will sustain the Examiner's rejections.

The Examiner contends that the prior art suggests that it would have been obvious to one of ordinary skill in the art to cut partially through the adhesive layer of an adherend without cutting the base material thereof.

Appellants contend the applied combination of prior art does not suggest the claimed cutting without cutting the base material.

The issue presented for review is as follows:

Has the Examiner reasonably determined that a person having ordinary skill in the art would have been led to perform a method for thermally releasing an adherend, which comprises the steps of: cutting an adherend adhered to a thermally releasable pressure-sensitive adhesive sheet without cutting the base material within the meaning of 35 U.S.C. § 103?

On this record, we answer this question in the affirmative.

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 considerations. *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 have been 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, 1740-41, 82 USPQ2d 1385, 1396 (2007) quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336-37 (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.’”); *In re Hoeschele*, 406 F.2d 1403, 1406-07, 160 USPQ 809, 811-812 (CCPA 1969) (“[I]t is proper to take into account not only specific teachings of the references but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. . . ”). The analysis supporting obviousness, however, should be made explicit and should “identify a reason that would have prompted a person of ordinary skill in the art to combine the elements” in the manner claimed. *KSR*, 127 S.Ct. at 1731, 82 USPQ2d at 1389.

As evidence of obviousness of the claimed subject matter under § 103, the Examiner has relied on the disclosures of APA, Tsujimoto, and Lu (Answer 4-6).

The APA acknowledges that pressure sensitive adhesive sheets have been used to temporarily hold a plurality of adherends to the sheet and upon application of heat to the entire sheet wherein all of the adherends are released simultaneously (Specification page 1, line 13 to page 2, line 24).

Tsujimoto teaches the use of a pressure sensitive adhesive sheet for holding a plurality of adherends and that upon heating the adhesive sheet loosens its grip upon the adherends thereby releasing them (col. 1, l. 68 to col. 2, l. 5). Tsujimoto further teaches the use of a heater in the shape of each individual adherend which is positionable under portions of the multiple adherend (col. 3, ll. 36-45).

Tsujimoto discloses the adhesive sheet (dicing tape) may comprise multiple layers including a shrink layer, an adhesive layer, and a non-shrinkable layer (col. 5, ll. 38-50; fig. 4). Figure 5 depicts be dicing tape that has been partially cut to the surface of the non-shrinkable film. Figure 6 depicts the shrinking of the dicing tape, including the deformation of the adhesive layer, after the application of heat and the shrinking (col. 6, ll. 30-38). It is recognized that the figure 6 shows the non-shrinkable layer has not been distorted due to the application of heat.

Tsujimoto discloses the separate heating of only the portion of the dicing tape. In this embodiment the adherends can be removed one at a time without loosening the remaining adherends (col. 7, l. 59 to col. 8, l. 7; fig. 8).

Lu describes a method of removing a plurality of adherends on a pressure sensitive adhesive sheet wherein an adhered layer and the adhesive layer, but not the base material of the adhesive sheet are cut to form individual adherends. Lu employs UV light to react with the adhesive for removal of the adherends. Lu teaches that the adhesive layer is cut either

partially or completely to divide the adhesive sections under each adherend from one another (col. 7, ll. 19-59).

Appellants argue that the prior art does not suggest the claimed cutting without cutting the base material. Appellants argue that the prior art must suggest the modification. Appellants further argue the UV reactive system of Lu does not provide motivation for and teaches away from modifying the thermally reactive system of the APA and Tsujimoto (Br. 9-10; Reply Br. 4).

Appellants' arguments are not persuasive. As discussed above, Tsujimoto and Lu both describe the reaction of a substrate, thermally or with UV, for removal of an adherend from a substrate that has been partially cut. As such, a person of ordinary skill in the art would have reasonably expected success in partially cutting the adhesive sheet of the APA and Tsujimoto in sections without cutting through the entire base layer of the sheet.

As a final point with respect to the § 103 rejections, we note that Appellants base no argument upon objective evidence of nonobviousness, such as unexpected results.

ORDER

The Examiner's rejection of claims 2, 3, 5 and 6 under 35 U.S.C. § 103(a) is affirmed.

Appeal 2007-1848
Application 10/131,178

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) (2006).

AFFIRMED

tf/ls

Sughrue – 265550
2100 Pennsylvania Ave., NW
Washington, DC 20037-3213