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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte Nitto Denko Corp.
(Inventors: Hiroaki Kishioka and
Hiroyuki Tsubaki)

Appeal 2011-007423
Application 10/765,359
Technology Center 1700

Before RICHARD E. SCHAFER, CHARLES F. WARREN, and
CATHERINE Q. TIMM, *Administrative Patent Judges*.

SCHAFER, *Administrative Patent Judge*.

DECISION ON APPEAL

Nitto Denko Corp. (Applicant) appeals from an Examiner's decisions rejecting claims 1, 2, 5 and 6. 35 U.S.C. §§ 6(b) and 134(a). We affirm.

The Claimed Subject Matter

The invention relates to double-sided pressure-sensitive adhesive sheets. The sheets are intended to be used to attach a touch screen to a display panel. The sheet has outer adhesive layers. Each adhesive layer must include an acrylic

polymer that includes a meth(acrylic) acid alkyl ester. The alkyl moiety of the ester must have 1 to 18 carbon atoms. The “major” monomer component of each layer must be the same and is limited to a specified listing of acrylates. The proportion of the major monomer in each layer must be at least 80% by weight based upon the total amount of monomer in the layer.

Structurally, the sheet does not include an intermediate substrate, i.e., a non-adhesive intermediate layer between the two adhesive layers. The claims also require that each layer have a specified level of a property called the 180°-peeling adhesive strength. This property appears to be a measure of the amount of force necessary to peel a specified length of a strip of the adhesive from a surface of specified a material. The adhesive on one side must have a peeling strength of at least 5.5 N/20mm from a norbornene surface. The peeling strength of the other side of the sheet must be no more than 5.0 N/20mm from a glass or triacetyl cellulose surface. The sheet is said to be optically isotropic, i.e., the optical properties are the same in all directions.

We reproduce exemplary Claim 1 below:

A double-sided pressure-sensitive adhesive sheet to be used in sticking and fixing a touch panel to a display surface of a display device, one surface of the double-sided pressure-sensitive adhesive sheet is capable of being adhered substantially entirely on the touch panel, and the other surface is capable of being adhered substantially entirely on the display surface of the display device, wherein the double-sided pressure-sensitive adhesive sheet has at least two pressure-sensitive adhesive layers but does not have a substrate, and has optical isotropy; and wherein the double-sided pressure-sensitive adhesive sheet has a thickness of 10 to 50 μm ,

wherein the pressure-sensitive adhesive layer in the touch panel side has a 180°-peeling adhesive strength (to a norbornene based resin film at a peeling rate of 300 mm/min at 23°C) of 5.5 N/20 mm or more, and the pressure-sensitive adhesive layer in

the display device side has a 180°-peeling adhesive strength (to a glass plate or a triacetyl cellulose film at a peeling rate of 300 mm/min at 23°C) of not more than 5.0 N/20 mm so that the double-sided pressure-sensitive adhesive sheet is repeatedly peelable from the display surface of the display device together with the touch panel, and

wherein the respective pressure-sensitive adhesive layers each comprise an acrylic polymer containing a (meth)acrylic acid alkyl ester in which the alkyl moiety thereof has from 1 to 18 carbon atoms as the major monomer component selected from the group consisting of methyl (meth)-acrylate, ethyl (meth)-acrylate, propyl (meth)-acrylate, isopropyl (meth)-acrylate, butyl (meth)-acrylate, isobutyl (meth)-acrylate, s-butyl (meth)-acrylate, t-butyl (meth)-acrylate, pentyl (meth)-acrylate, hexyl (meth)-acrylate, heptyl (meth)-acrylate, octyl (meth)-acrylate, isooctyl (meth)-acrylate, 2-ethylhexyl (meth)-acrylate, nonyl (meth)-acrylate, isononyl (meth)acrylate, decyl (meth)-acrylate, isodecyl (meth)-acrylate, undecyl (meth)-acrylate, and dodecyl (meth)-acrylate, and the major monomer for the respective pressure-sensitive adhesive layers is constituted from the same monomer and the proportion of the major monomer component constituting each pressure-sensitive adhesive layer is 80% by weight or more based on the whole amount of the monomer components.

Brief, 20-21 (Claims Appendix).

Rejections

In the Answer, the Examiner maintained the following rejections:

1. Claims 1, 2, 5, and 6 under 35 U.S.C. § 112, ¶ 1, for failing to be supported by the written description;
2. Claims 1, 2, and 5 under 35 U.S.C. § 103(a) over the combined teachings of Kishioka¹ and Hitoshi;² and

¹ U.S. Publication 2002/0098352 A1, published Jul. 25, 2002.

3. Claim 6 under § 103(a) over the combined teachings of Kishioka, Hitoshi and Okabe.³

OPINION

I. Written Description

The Examiner rejected Claims 1, 2, 5, and 6 under 35 U.S.C. § 112, ¶ 1. The Examiner found that the limitation “the major monomer for the respective pressure sensitive adhesive layers is constituted of the same monomer” did not find support in applicant’s original disclosure.

Applicant points to the paragraph bridging pages 20 and 21 of the Specification for support. That portion says that the layers may be made of the same kind or different pressure sensitive adhesives. Applicant also points to page 21 which describes the use of a layer of strongly bonding adhesive containing butyl acrylate as the major component in conjunction with a weakly bonding adhesive layer also using butyl acrylate as the major monomer. Lastly, Applicant relies on its Example 2 (Specification 50) which describes a sheet having three adhesive layers, each having 2-ethylhexyl acrylate as the major monomer.

We agree with Applicant. The identified portions of the Specification reasonably convey the concept that the major monomer for each of the adhesive layers may be the same.

The Examiner’s decision rejecting Claims 1, 2, 5, and 6 under 35 U.S.C. § 112, ¶ 1, is reversed.

² EPO Publication EP 0 930 322 A2, published Jul. 12, 1999.

³ English Translation of Japanese patent publication JP 07-105781, published Apr. 21, 1995.

II. Prior Art Rejections

A. Claims 1, 2, and 5

Applicant argued the rejection of these claims as a group. Therefore, we will decide the appeal of rejections on the basis of Claim 1. 37 C.F.R. § 41.37(c)(1)(vii).

The dispositive issue with respect to this rejection is whether the Examiner erred in determining that the combined teachings of Kishioka and Hitoshi would have led one skilled in the art to a double-sided pressure-sensitive adhesive meeting the peeling adhesive strength limitations required by the claims. Brief 14. After a careful review of Applicant's arguments and the record, we fail to see error in the Examiner's rejection.

The Examiner concluded that double-sided pressure-sensitive adhesive sheets having the composition and structure required by the claims would have been obvious from the combined teachings of Kishioka and Hitoshi. The Examiner inferred that those sheets would have had the required peeling adhesive strengths. Answer 8-9.

Applicant argues that the total thickness of the sheets must be 10 to 50 μm and the references do not specifically teach a total thickness for a double-sided sheet having multiple layers. Brief 15.

Kishioka is directed to double-sided pressure-sensitive adhesive sheets using adhesive of acrylic polymers containing a (meth)acrylic acid alkyl ester monomer. Kishioka teaches that the thickness of the adhesive "layer" is said to generally range 5 to 500 μm and preferably is 10 to 100 μm . Kishioka ¶ 65. Kishioka also teaches that the pressure sensitive adhesive "layer" may be made up of a plurality of layers. Kishioka ¶ 65.

We find that one having ordinary skill in the art would have understood Kishioka as teaching that the thickness of the adhesive layer, whether made of a single layer or a plurality of layers, would preferably be in the range of 10 to 100 μm . Since Applicant's 10 to 50 μm range is within the range described by Kishioka, a sheet having two pressure sensitive adhesive layers with a total thickness in the claimed range would have been prima facie obvious. As a general matter a claimed range that falls within or overlaps a prior art range, does not establish an unobvious distinction over the prior art. *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003) (A prima facie case of obviousness typically exists when the claimed ranges overlap the ranges disclosed in the prior art).

In any event, Kishioka teaches that the adhesive layer can be any appropriate thickness as long as the handling properties are not deteriorated. Kishioka, ¶ 64. Thus, the determination of the appropriate thickness is within the skill of the art and prima facie obvious.

Applicant asserts that a total thickness of 10 – 50 μm leads to excellent optical characteristics and directs us to Examples 1 and 2 and the comparative Examples in Table 1 on page 50 of its specification. Brief 16. However, Table 1 and the corresponding description in the Specification do not establish that the thickness of 10 – 50 μm is critical with respect to optical characteristics. Comparative Example 2 is reported as having a thickness of 120 μm but having excellent optical characteristics as measured by total luminous transmittance. Specification 48-52. Additionally, as noted by the Examiner (Answer 14), the examples do not provide a side-by-side comparison where the only difference between the sheets is the thickness. Comparative Example 1, the only example said to have unsatisfactory optical properties, includes an intermediate substrate of PET. Specification 50. Applicant has not explained why the unsatisfactory optical

properties did not result from the presence of the PET substrate layer rather than the thickness of 52 μm . Thus, the record does not show criticality of the thickness as it relates to optical characteristics.

Applicant argues that the combined teachings of the references fail to teach or suggest the concept that each of the layers has the same major monomer. Brief 16-17. As found by the Examiner, Kishioka teaches adhesive sheets having a plurality of layers. Kishioka ¶ 65. The Examiner held that one skilled in the art would make the polymer layers from the same major monomer to simplify the production of the adhesive layers. Answer 15-16. Applicant has not challenged the Examiner's reasoning on that point. Additionally, we note that one having ordinary skill in the art would have been aware, and would have recognized, that using polymers having the same major monomer would tend to minimize possible incompatibilities between adjoining layers. We fail to see error in the Examiner's determination that the requirement that each layer include a polymer having the same major monomer does not recite an unobvious distinction.

Applicant's arguments have not persuaded us of error in the Examiner's conclusion that the double-sided pressure-sensitive adhesive sheets meeting the composition and structural requirements of the claims would have been obvious.

We also are not persuaded of error in the Examiner calling upon Applicant to demonstrate that the specified peeling strengths and other properties are unexpected or otherwise not shared by the prior art. Answer 8-9. Identifying an invention with reference to the magnitude of a new or uncommon property substantially diminishes the Office's ability to determine the significance of that property to patentability. This is especially true where Applicant has not indicated that commonly employed industry standard protocols were used to determine the magnitude of that property. The PTO does not have facilities to carry out tests to

determine the properties possessed by claimed and prior art products or have access to industry experts. Information relating to the peeling strengths and other properties of adhesive sheets including acrylic polymers containing a (meth)acrylic acid alkyl ester is uniquely available to Applicant. Under the facts of this case, placing the burden on Applicant to show that comparable 180°-peeling strength and other properties are not present in the products suggested by the prior art, is reasonable.

Applicant argues that the issue is one of inherency and the Examiner has not established that the properties would have necessarily and always been obtained. Brief, 17. However, the issue is not inherency, but whether under the facts of this appeal it is appropriate to place the burden on Applicant to show that the specified peeling strength is not present in the adhesive layers suggested by the prior art. For the reasons stated above, we think that it is.

We have considered applicant's remaining arguments and find none that warrant reversal. *Cf., Loughlin v. Ling*, 684 F.3d 1289, 1295 (Fed. Cir. 2012).

We affirm the Examiner's decision rejecting Claims 1, 2, and 5.

B. Claim 6.

The Examiner additionally relied on the Okabe reference in rejecting Claim 6. Applicant argues only that Okabe fails to teach the 180°-peeling strength limitations. Brief 17. We affirm the Examiner decision with respect to Claim 6 for the reasons we stated with respect to Claims 1, 2, and 5.

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DECISIONS

The Examiner's decision rejecting Claims 1, 2, 5, and 6 under the first paragraph of § 112 is reversed.

The Examiner's decisions rejecting Claims 1, 2, 5, and 6 under 35 U.S.C. § 103(a) are 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).

AFFIRMED

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