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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARINA TEMCHENKO,
DAVID WILLIAM AVISON, FRANK ANTHONY MANNARINO,
SAMUEL LIM, and SHOGO SUGIURA

Appeal 2015-004759
Application 12/243,259
Technology Center 1700

Before LINDA M. GAUDETTE, GEORGE C. BEST, and
BRIAN D. RANGE, *Administrative Patent Judges*.

BEST, *Administrative Patent Judge*.

DECISION ON APPEAL

The Examiner (1) finally rejected claims 1–11 of Application 12/243,259 under 35 U.S.C. § 103(a) as obvious, (2) rejected claims 1 and 2 for obviousness-type double patenting (OTDP), and (3) provisionally rejected claims 1–11 for OTDP. Final Act. (March 18, 2014). Appellants¹ seek reversal of these rejections pursuant to 35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6.

For the reasons set forth below, we REVERSE.

¹ Madico, Inc. is identified as the real party in interest. Appeal Br. 3.

BACKGROUND

The '259 Application relates to protective backing sheets for photovoltaic modules. Spec. ¶ 2.

Claim 1 is representative of the '259 Application's claims and is reproduced below:

1. A backing sheet for a photovoltaic module comprising:
a substrate; and
a layer comprising fluoropolymer cured on the substrate, wherein the layer comprising fluoropolymer includes a hydrophobic silica.

Appeal Br. 16 (Claims App.).

REJECTIONS

On appeal, the Examiner maintains the following rejections:

1. Claims 1, 2, and 5–11 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Higuchi² and Ying.³ Final Act. 3.
2. Claim 3 is rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Higuchi, Ying, and Rautschek.⁴ Final Act. 6.
3. Claim 4 is rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Higuchi, Ying, and Debergalis.⁵ Final Act. 7.

² WO 2007/010706 A1, published January 25, 2007. We cite EP 1 938 967 A1 as the English-language equivalent.

³ US 6,194,098 B1, issued February 27, 2001.

⁴ US 2006/0020082 A1, published January 26, 2006.

⁵ US 2007/0154704 A1, published July 5, 2007.

4. Claims 1 and 2 are rejected on the ground of obviousness-type double patenting as unpatentable over the combination of claims 1–12 of Kernander '707⁶ and Ying. Final Act. 9.
5. Claims 1 and 2 are rejected on the ground of OTDP as unpatentable over the combination of claims 1–4 of Kernander '083⁷ and Ying. Final Act. 10.
6. Claims 1–11 are provisionally rejected on the ground of OTDP as unpatentable over the combination of claims 1–5, 7, 9, 33–37, and 39–44 of the '962 Application.⁸ Final Act. 10.
7. Claims 1 and 2 are provisionally rejected the ground of OTDP as unpatentable over the combination of claims 24–27 of the '120 Application⁹ and Ying. Final Act. 11.
8. Claims 1 and 6–11 are provisionally rejected on the ground of OTDP as unpatentable over the combination of claims 1–3, 5–7, and 9–14 of the '893 Application¹⁰ and Ying. Final Act. 12.

DISCUSSION

Rejection 1. The Examiner rejected claims 1, 2, and 5–11 as unpatentable over the combination of Higuchi and Ying. Final Act. 3. Because the Examiner's rejection is based upon several erroneous factual findings, we reverse.

⁶ US 7,338,707 B2, issued March 4, 2008.

⁷ US 7,579,083 B2, issued August 25, 2009.

⁸ US Application 12/011,962, filed January 30, 2008.

⁹ US Application 12/504,120, filed July 16, 2009.

¹⁰ US Application 12/977,893, filed December 23, 2010.

First, the Examiner erred in finding that Ying is analogous art to Higuchi. A reference may only be used as part of a § 103 rejection if it is either (1) in the field of the inventors' endeavor or (2) reasonably pertinent to the particular problem with which the inventors were concerned. *In re Kahn*, 441 F.3d 977, 986–87 (Fed. Cir. 2006).

Here, the Examiner found that Ying is in the field of Appellants' endeavor:

First of all, Higuchi and Ying and are in the same field of Appellant's endeavor. Appellant's claimed invention is directed toward a polymeric sheet used as a protective layer. Applicant's field of endeavor is not a photovoltaic cell. The claims recite the intended use of the polymeric sheet in the solar cell, but there is no structural limitation of the solar cell. Higuchi teaches a polymeric sheet used as a protective layer for the solar cell. Ying teaches adding pigment to a polymeric protective layer with adding pigment being explicitly suggested by Higuchi. *The field of endeavor in Higuchi and Ying are polymeric protective layer which is the same as Appellant's field of endeavor.* Secondly, Higuchi and Ying both are concerned about increasing mechanical strength of a polymeric protective layer which is also concerned by Appellant. *Lowering water vapor transmission rate correlates to the increase in mechanical strength of the polymeric protective layer (see paragraph 0003 of Higuchi).* It is noted that the polymeric protective layer of Ying coats the surface of a porous layer so that only limited soluble material can pass through the pores as intended, but not through the solid portion of polymeric protective layer which functions as a protection.

Answer 4 (emphasis added).

The Examiner erred by finding that Appellants' field of endeavor is polymeric sheet materials used as protective layers. The Examiner mistakenly defined the field of endeavor solely by considering the '259 Application's claims. *See Answer 4.* An application's specification must be

considered in making this determination. *In re Mettke*, 570 F.3d 1356, 1359 (Fed. Cir. 2009). In this case, a review of the '259 Application's Specification reveals that Appellants' field of endeavor is photovoltaic modules. Spec. ¶ 2.

The Examiner also erred by finding that Ying is reasonably pertinent to the problem which concerned the inventors. Answer. 4. As demonstrated by a review of the '259 Application's Specification, Appellants were concerned with providing a protective backing sheet with desirable weather resistance, heat resistance, color retention, adhesion between layers and encapsulant, and scratch resistance. Spec. ¶ 10. Ying, on the other hand, was concerned with separators for electrochemical cells. Abstract. Because such separators are located inside the cell, Ying would not have been concerned with the weather resistance or color retention of the sheet material used in the separators. Indeed, the separators used in electrochemical cells typically are porous. *See* Ying col. 1, ll. 42–59.

The Examiner further erred by finding that a “[l]ower[] water vapor transmission rate correlates to the increase in the mechanical strength of the polymeric protective layer (see paragraph 0003 of Higuchi).” Answer 4. The cited portion of Higuchi does not support the Examiner's assertion. Rather, it states that the backing sheet of a photovoltaic cell serves two purposes: increasing the cell's mechanical strength and preventing water vapor permeation. Higuchi ¶ 3.

Second, even if Ying were analogous art that could be used in an obviousness rejection of the '259 Application's claims, the Examiner erred by failing to provide sufficient reasoning to support a finding that a person of ordinary skill in the art would have had a reason to combine Higuchi and Ying. *In re Kahn*, 441 F.3d at 988 (“[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 particular, the Examiner found that Higuchi describes the addition of pigments to the fluoropolymer layer of its backing sheet for a photovoltaic module. Final Act. 3 (citing Higuchi ¶¶ 46, 49). Higuchi, however, does not describe using hydrophobic silica as a pigment that can be used. *Id.* The Examiner then turns to Ying, which identifies hydrophobic silica as a pigment that can be added to the protective layer of its separator sheet. *Id.* at 3–4 (citing Ying, col. 20, ll. 4–19).

According to the Examiner:

It would have been obvious to one skilled in the art at the time the invention was made to modify the backing sheet of Higuchi et al. by adding a pigment such as hydrophobic silica taught by Ying et al. to the fluoropolymer layer, because Higuchi et al. explicitly suggests adding a pigment to the fluoropolymer layer and Ying et al. teaches adding the pigment such as hydrophobic silica would obtain a desired mechanical strength or some other improvement in the properties of the protective layer (see col. 20 lines 4–19 of Ying et al.).

Final Act. 4.

This argument is insufficient to support the combination of Higuchi and Ying. Higuchi includes pigments on a list of additives that can be blended into the coating composition containing a fluorine-containing polymer. Higuchi ¶ 46. Higuchi, however, explains why a pigment should be added: “It is strongly desired to add a pigment from the viewpoint of making appearance of a solar cell module beautiful.” *Id.* ¶ 49. On the other hand, Ying contains a general statement that the addition of a pigment may increase mechanical strength or some other improvement in the properties of

the protective coating layer of its battery electrode separator. The battery electrode separator is sandwiched between the electrodes of an electrochemical cell. The Examiner has not adequately explained why a person having ordinary skill in the art looking to improve the appearance of a solar cell module would have turned to a reference describing an internal component of an electrochemical cell which has no effect on the appearance of the electrochemical cell as a whole. Thus, the Examiner erred in finding that a person having ordinary skill in the art would have had a reason to combine Higuchi and Ying.

In view of the erroneous factual findings discussed above,¹¹ we reverse the rejection of claims 1, 2, and 5–11 of the '259 Application as unpatentable over the combination of Higuchi and Ying.

Rejections 2 and 3. These rejections depend upon the Examiner's factual findings regarding Ying. *See* Final Act. 6–8. As discussed above, several of these findings are erroneous. Thus, the record before us mandates reversal.

Rejections 4 and 5. These OTDP rejections depend upon the Examiner's factual findings regarding Ying. *See* Final Act. 9–10. As discussed above, several of these findings are erroneous. Thus, the record before us mandates reversal.

Rejection 6. The Examiner provisionally rejected claims 1–11 for OTDP over claims 1–5, 7, 9, 33–37, and 39–44 of the '962 Application.

¹¹ Because the Examiner's conclusion that claims 1, 2, and 5–11 of the '259 Application are prima facie obvious over the combination of Higuchi and Ying is based upon erroneous findings of fact, we do not express any opinion regarding whether Appellants' allegedly unexpected results are sufficient to overcome a prima facie case of obviousness.

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Final Act. 10–11. The '962 Application was abandoned as of September 13, 2016. Thus, this rejection is moot.

Rejection 7. The Examiner provisionally rejected claims 1 and 2 for OTDP as unpatentable over the combination of claims 24–27 of the '120 Application and Ying. Final Act. 11. On March 8, 2011, the '120 Application issued as US 7,901,779 B2 (“Kernander '779”). Because the '120 Application has issued as Kernander '779, this rejection no longer is provisional. Claims 24–27 of the '120 Application have been renumbered as claims 1–4 in Kernander '779. *See* '120 Application Prosecution History, Index of Claims (December 21, 2010).

Our review of the respective prosecution histories reveals that neither claims 1 and 2 of the '259 Application nor claims 24–27 of the '120 Application (now claims 1–4 of Kernander '779) have been substantively amended since the Examiner first entered this rejection in the January 19, 2011 Non-Final Office Action.

In view of the foregoing, we consider whether the Examiner erred in rejecting claims 1 and 2 of the '259 Application for OTDP over the combination of claims 1–4 of Kernander '779 and Ying.

This OTDP rejection is based, in large part, upon the Examiner's findings of fact concerning Ying. As discussed above, we have determined that several of these factual findings are erroneous. Accordingly, we cannot sustain this OTDP rejection of claims 1 and 2 on the record before us.

Rejection 8. The Examiner provisionally rejected claims 1 and 6–11 for OTDP as unpatentable over the combination of claims 1–3, 5–7, and 9–14 of the '893 Application and Ying. Final Act. 12. The '893 Application was abandoned as of September 25, 2015. Thus, this rejection is moot.

CONCLUSION

For the reasons set forth above, we reverse (1) the rejection of claims 1, 2, and 5–11 as unpatentable over the combination of Higuchi and Ying, (2) the rejection of claim 3 as unpatentable over the combination Higuchi, Ying, (3) the rejection of claim 4 as unpatentable over the combination of Higuchi, Ying, and Debergalis, and (4) the OTDP rejections of claims 1 and 2 over the combination of Ying and various claims of Kernander '083, Kernander '707, or Kernander '779.

The provisional OTDP rejections (a) of claims 1–11 as unpatentable over certain claims of the '962 Application and (b) of claims 1 and 6–11 as unpatentable over the combination of certain claims of the '893 Application and Ying are moot.

REVERSED