

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* WILLIAM KEITH FISHER

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Appeal 2007-3685  
Application 10/855,415  
Technology Center 1700

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Decided: December 31, 2007

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

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's  
decision rejecting claims 1-33. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

## I. BACKGROUND

The invention relates to a polymer sheet used as an interlayer in light-transmitting laminates such as safety glass, multiple-layer glass panels using the interlayer, and a method for reducing the transmission of infrared radiation through such glass panels. To reduce the transmission of infrared radiation, an infrared absorbing agent is included in the interlayer. Claim 1 is illustrative of the subject matter on appeal:

1. A polymer interlayer comprising an infrared absorbing agent, wherein said agent comprises a dielectric core disposed within a conductive coating and wherein said agent selectively absorbs infrared light.

Appellant requests review of the sole rejection maintained by the Examiner: The rejection of claims 1-33 under 35 U.S.C. § 103(a) as unpatentable over Toyama et al. (US 6,903,152 B2 issued Jun. 7, 2005) in view of Kondo (US 6,315,848 B1 issued Nov. 13, 2001), Oldenburg et al. (US 6,685,986 B2 issued Feb. 3, 2004), and Varadan et al. (US 5,366,664 issued Nov. 22, 1994).

## II. DISCUSSION

Appellant contends that, as a matter of law, the Examiner's rejection is improper (Br. 3). According to Appellant, the Examiner has: (1) failed to identify a proper motivation for combining the references, and (2) has relied upon nonanalogous art (Br. 3).

Appellant does not argue any claim separately from the others. We select claim 1 as representative for deciding the issues on appeal.

The issue on appeal arising from the contentions of Appellant and the Examiner is: Has Appellant identified a reversible error in the Examiner's obviousness rejection of representative claim 1?

A preponderance of the evidence of record supports the following Findings of Facts (FF):

1. Toyama and Kondo are both directed to interlayer films that contain an agent functioning to protect from infrared radiation; referred to as heat-ray shielding microparticles (Toyama, col. 13, ll. 20-27) or ultra-fine heat insulating particles (Kondo, col. 2, l. 61 to col. 3, l. 3).
2. According to Toyama, the particle is a metal oxide particle. The composition of the metal oxide microparticle is not particularly restricted but includes, among others, a particle of tin-doped indium oxide (ITO), antimony-doped tin oxide (ATO), and aluminum-doped zinc oxide (AZO) (Toyama, col. 13, ll. 27-30).
3. Kondo describes a wide range of compositions for the ultra-fine particles including a long list of metals, compounds containing metals (oxides, nitrides, oxynitrides, sulfides), and composites containing the metals (doped metals and doped compounds of metal including ITO and ATO) (Kondo, col. 4, ll. 14-61).
4. Oldenburg describes metal nanoshell particles that can be tuned to absorb infrared radiation, the particles consisting of a non-conducting inner layer surrounded by a conducting outer layer (Oldenburg, col. 3, ll. 36-45).
5. Oldenburg discloses that the nanoshell particles can be added to polymers such that the resulting materials can absorb radiation. “Embodiments containing these materials can be used in thermal

management to produce more energy efficient buildings, automobiles and storage chambers creating savings in air conditioning and heating costs.” (Oldenburg, col. 4, ll. 39-52).

6. Oldenburg specifically suggests using the nanoshells to absorb or scatter light in the infrared range and that “such compositions would be ideal for use in a wide range of materials including … windows … that could be used on or in vehicles and building structures.” (Oldenburg, col. 8, ll. 17-23).

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1734 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 127 S. Ct. at 1734 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”).

Applying the preceding legal principles to the Factual Findings in the record of this appeal, we determine that the Examiner has established a *prima facie* case of obviousness.

Appellant contends that Oldenburg “is nonanalogous art to the polymer interlayer and laminated glass art of the present invention.” This is

because, according to Appellant, “the Oldenburg reference is classified in the Patent Office class of ‘coating process’ (427),” an art area nonanalogous to the interlayer and laminated glass art (Br. 5).

Whether a prior art reference is within the scope of the prior art one of ordinary skill in the art would have been presumed to have been aware, i.e. analogous art, is a threshold question in the inquiry of obviousness. To label the reference as analogous prior art merely connotes that it is relevant to a consideration of obviousness under section 103 as “prior art.” *In re Sovish*, 769 F.2d 738, 742 (Fed. Cir. 1985). “Two criteria have evolved for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problems addressed, and (2) if the reference is not within the field of the inventor’s endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.” *In re Clay*, 966 F.2d 656, 658-59 (Fed. Cir. 1992)). As recognized in *KSR*, “familiar items may have obvious uses beyond their primary purposes.” *KSR*, 127 S. Ct. at 1742.

We determine that Oldenburg is within the scope of prior art such that one of ordinary skill in the art of polymer interlayers and laminated glass would have been presumed to have been aware of its contents. Oldenburg is within the field of endeavor: This reference specifically discloses that the nanoshell particles disclosed therein are useful in thermal management windows (FF 5 and 6). Oldenburg is also reasonably pertinent to the particular problem of using particles to absorb radiation in window materials to provide a heat insulation property (FF 4-6).

Appellant has not shown that the Examiner reversibly erred in finding Oldenburg to be within the scope and content of the prior art.

Turning to the question of whether the combination of prior art provides the necessary evidence of obviousness; we agree with the Examiner that it does. “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR*, 127 S. Ct. at 1739. Here, Toyama and Kondo both show that it was known in the art to use particles in an interlayer to provide the interlayer with a heat insulation property (FF 1). Toyama and Kondo evince that those of ordinary skill in the art understood that a range of metals, metal oxides, and composites were known to provide the necessary heat insulation property (FF 2 and 3). Oldenburg describes a particle that also has heat insulation properties and can be used in windows as well as in polymer materials (FF 5 and 6). The combination is obvious because the use of the known infrared ray absorbing nanoshell particles of Oldenburg would have been expected to produce the predictable result of providing the necessary heat insulating property in the interlayer of Toyama (FF 4-6).<sup>1</sup>

### III. CONCLUSION

Appellant has not identified a reversible error in the Examiner’s obviousness rejection of representative claim 1. We sustain the rejection of claims 1-33 under 35 U.S.C. § 103(a).

### IV. DECISION

The decision of the Examiner is affirmed.

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<sup>1</sup> A discussion of Varadan is not necessary to our Decision.

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V. TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal maybe extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

tc

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