

The opinion in support of the decision being entered today was not written for publication and is not precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte VOLKER BENZ, WOLFGANG SCHARNKE,
MICHAEL MEIER-KAISER and MICHAEL MULLER

Appeal No. 1997-2813
Application 08/329,075

ON BRIEF

Before KIMLIN, PAK and OWENS, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 2-8 and 14. Claims 9-12, the other claims remaining in the present application, stand withdrawn from consideration. Claim 14 is illustrative:

14. A durable, light-permeable, infrared-reflecting body comprising an amorphous base material of light-permeable plastic and a coating layer of 5-40 μm thickness thereon which permanently adheres to the base material, said light-permeable infrared-reflecting body being transmissive to visible light and

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reflecting infrared light, and said coating layer comprising a transparent water-insoluble binder and infrared-reflecting particles in an amount of 20-40 wt.% based on said coating layer, said particles being oriented parallel to the surface of the base material, and wherein said infrared-reflecting particles comprise platelet-shaped carriers each having a 60-120 nm thick titanium dioxide layer thereon, said carriers each having a thickness of 200-2000 nm, and a diameter of 5-100 μm , and wherein the mean diameter of all the carriers is 20-70 μm .

The examiner relies upon the following references as evidence of obviousness:

Linton	3,087,828	Apr. 30, 1963
Bauer et al. (Bauer)	4,090,773	May 23, 1978
Kishima	4,668,588	May 26, 1987
Weber et al. (Weber)	4,916,014	Apr. 10, 1990
Reafler	5,114,789	May 19, 1992
European Patent Application	0,428,937	May 29, 1991

Appellants' claimed invention is directed to a light-permeable infrared-reflecting body comprising a light-permeable plastic base and a coating layer comprising infrared-reflecting particles of titanium dioxide on platelet-shaped carriers. In addition to the infrared-reflecting particles, the coating layer also comprises a transparent water-insoluble binder.

Appellants submit at page 3 of the brief that "Claims 3 and 8 each stand or fall separately." Accordingly, claims 2 and 5-7 stand or fall together with claim 14.

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Appealed claims 14 and 2-8 stand rejected under 35 U.S.C. § 103 as being unpatentable over Weber in view of EP '937, Kishima, Bauer and Linton. Claim 4 also stands rejected under 35 U.S.C. § 103 as being unpatentable over the stated combination of references in further view of Reafler.

We have thoroughly reviewed each of Appellants' arguments for patentability. However, we are in complete agreement with the examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we will sustain the examiner's rejections for essentially those reasons expressed in the answer, and we add the following primarily for emphasis.

A principal argument advanced by appellants, which underlies separate arguments directed to specifically claimed features, is that the examiner, with the aid of impermissible hindsight, has selected separate teachings from a number of references in order to meet all the requirements of the claimed infrared-reflecting body. We do not subscribe to this position. In our view, the examiner's citation of 5 and 6 references in the two rejections is necessitated by appellants' claimed recitation of a number of features that were conventional and obvious to one of ordinary

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skill in the art of making infrared-reflecting bodies. From our perspective, any hindsight used by the examiner was not the type proscribed by our reviewing court.

There is no dispute that Weber, like appellants, discloses an infrared-reflecting body comprising a substrate coated with a layer comprising a water-insoluble binder and titanium oxide-coated platelets which reflect infrared radiation. One of the arguments advanced by appellants is that the binder of Weber's coating layer is not transparent but, rather, opaque due to the inclusion of opaque pigments. However, we agree with the examiner that Weber's disclosure of top-coat paints would have suggested a transparent coating to one of ordinary skill in the art. Furthermore, Weber's background discussion at col. 2, lines 4 et seq., evidences that it was known in the art to apply transparent infrared-reflecting coatings on transparent substrates for architectural purposes, light bulb envelopes, protective lenses, solar heat devices, etc. Hence, although Weber does not expressly teach that the substrate is transparent, but only plastic, in general, we agree with the examiner that it would have been obvious to one of ordinary skill in the art to employ light-permeable plastic for Weber's substrate. As pointed by the examiner, EP '937 and Bauer provide further support for

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the conclusion of obviousness. In particular, EP '937 discloses infrared-reflecting coatings for transparent greenhouses, which coatings' visible light transmission can be adjusted at will (page 2, lines 1-2 and 42-43). Bauer also discloses infrared-reflecting platelets in a transparent coating, as well as arranging the reflecting platelets parallel to the surface in order to increase the amount of reflectance (see col. 3, lines 22 et seq. for a teaching that the percentage of reflecting platelets that are parallel to the surface is a result effective variable with respect to the strength of reflectance).

Regarding appellants' argument pertaining to the claim 3 recitation of "a reflection of at least 40 percent at 1000 nm", Bauer expressly teaches that the amount of reflection is a result effective variable contingent upon both the amount of pigment used and the degree of orientation of the pigment particles (col. 3, lines 22-38).

The remaining arguments of appellants have been adequately addressed by the examiner in the answer.

As a final point, we note that appellants base no argument upon objective evidence of non-obviousness, such as unexpected results.

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In conclusion, based on the foregoing and the reasons well-stated by the examiner, the examiner's decision rejecting the appealed claims is affirmed.

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

AFFIRMED

EDWARD C. KIMLIN)	
Administrative Patent Judge)	
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CHUNG K. PAK)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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