

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PAUL A. MEDWICK,
RUSSELL C. CRISS, Dec'd,
DENVRA CRISS, Legal Rep.,
MEHRAN ARBAB,
and
JAMES J. FINLEY

Appeal No. 2006-1002
Application No. 09/945,892

ON BRIEF

Before KIMLIN, WALTZ and FRANKLIN, Administrative Patent Judges.
KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 29-39, 41-44, 50-57, 59, 62-64, 67 and 68. Claim 29 is illustrative:

29. A solar control coated article, comprising:
a substrate having a surface;

a first antireflective layer having a thickness ranging from 272 Å to 332 Å over the surface of the substrate;

a first infrared reflective layer having a thickness ranging from 80 Å to 269 Å over the first

antireflective layer;

a first primer layer having a thickness ranging from 8 Å to 30 Å and consisting essentially of titanium over the first infrared reflective layer;

a second antireflective layer having a thickness ranging from 698 Å to 865 Å over the first primer layer;

a second infrared reflective layer having a thickness ranging from 180 Å to 290 Å over the second antireflective layer;

a second primer film having a thickness ranging from 8 Å to 30 Å and consisting essentially of titanium over the second infrared reflective layer; and

a third antireflective layer having a thickness ranging from 60 Å to 273 Å over the second primer layer, such that the coated article in an insulated unit defined as a test unit provides for the test unit to have a luminous transmission of less than 70%, a solar heat gain coefficient of less than about 0.38 and a ratio of luminous transmittance to solar heat gain coefficient of greater than about 1.85, the test unit for determining the luminous transmission, the shading coefficient, the solar heat gain coefficient, and the ratio of luminous transmittance to solar heat gain coefficient having a first clear float glass sheet and a second clear float glass sheet, each of the glass sheets having a nominal thickness of 6 mm and a first major surface and an opposite major surface defined as a second major surface, the second major surfaces of the glass sheets face one another and are at a nominal spacing of 0.5 inch (1.27 centimeters) from one another, the solar control coating is over the second major surface of the first sheet and the first major surface of the first sheet is the outboard surface, edges of the first and second glass sheets are sealed to provide a chamber between the glass sheets, the chamber having a nominal gas fill of air or argon.

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

Yudenfriend	4,489,134	Dec. 18, 1984
Proscia	5,248,545	Sep. 28, 1993
Zagdoun et al. (Zagdoun)	5,776,603	Jul. 7, 1998
Hartig et al. (Hartig)	5,800,933	Sep. 1, 1998
Arbab et al. (Arbab)	5,821,001	Oct. 13, 1998
Baratuci et al. (Baratuci)	5,851,609	Dec. 22, 1998
Finley	5,902,505	May 11, 1999
Boire et al. (Boire)	6,045,896	Apr. 4, 2000

Appellants' claimed invention is directed to a solar controlled coated article comprising a substrate containing first, second and third antireflective layers, first and second infrared reflective layers, and first and second primer layers of titanium over the first and second infrared reflective layers, respectively. The coated article in an insulated test unit provides for the test unit to have the recited luminous transmission, solar heat gain coefficient and ratio of luminous transmittance to solar heat gain coefficient. Also, the claimed antireflective, infrared reflective and primer layers have thicknesses within the recited ranges. The coated article finds utility in windows for buildings or insulating glass units.

The appealed claims stand rejected under 35 U.S.C. § 103(a) as follows:

(a) claims 29-38, 41-44, 51-54, 56, 57, 59, 62-64, 67 and 68 over Finley in view of Zagdoun and Baratuci,

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(b) claims 39 and 55 over the stated combination of references further in view of Arbab,

(c) claims 39 and 55 over the stated combination of references further in view of Hartig,

(d) claim 50 over the stated combination of references further in view of Yudenfriend,

(e) claims 29-39, 41-44, 51-57, 59, 62-64, 67 and 68 over Boire in view of Arbab, Zagdoun and Baratuci, and,

(f) claim 50 over the references cited in (e) above further in view of Yudenfriend.

Appellants have not submitted separate substantive arguments for the various groups of claims separately rejected by the examiner, but rely upon arguments made for claim 29. Accordingly, all the appealed claims stand or fall together with claim 29.

We have thoroughly reviewed each of appellants' arguments for patentability. However, we are in complete agreement with the examiner's reasoned analysis and application of the prior art, as well as his cogent disposition of the arguments raised by appellants. Accordingly, we will adopt the examiner's reasoning as our own in sustaining the rejections of record, and we add the following for emphasis only.

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We consider first the examiner's rejection of claim 29 over Finley in view of Zagdoun and Baratuci. Appellants do not dispute the examiner's factual determination that Finley discloses a solar control article that, like appellants' coated article, comprises a first antireflection layer of tin/zinc oxide, a first buffer layer, an infrared-reflective layer of silver metal, a second buffer layer, a second anti-reflective layer, a third buffer layer and a second infrared reflective layer.

The examiner recognizes that the layers of Finley do not have thicknesses that fall within the claimed ranges. However, as noted by the examiner, Finley expressly teaches that "[t]he thicknesses of the various layers are limited primarily by the desired optical properties such as transmittance" (column 7, lines 39-41). Accordingly, we fully concur with the examiner that one of ordinary skill in the art would have found it obvious to modify the thicknesses of Finley's antireflective, infrared reflective and primer layers such that they fall within the claimed ranges in order to achieve a particular level of optical properties, such as transmittance. It is well settled that where patentability is predicated upon a change in a condition of a prior art article or composition, such as a change in size or

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concentration, the burden is on the applicant to establish with objective evidence that the change is critical, i.e., it leads to a new, unexpected result. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990); In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

In the present case, as emphasized by the examiner, appellants have proffered no objective evidence which demonstrates that the combination of antireflective, infrared reflective and primer layers having thicknesses within the claimed ranges produces results that would have been considered unexpected by one of ordinary skill in the art in light of the state of the prior art. Bare assertions of beneficial results are no substitute for objective evidence of unexpected results. In re Pearson, 494 F.2d 1399, 1405, 181 USPQ 641, 646 (CCPA 1974). We observe that appellants do not challenge the examiner's legal conclusion that "[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to use the glass article of Finley in a dual glass plate arrangement with a gas-filled space, as disclosed by Zagdoun, because this article possesses a reinforced thermal insulation property desirable in some architectural applications" (page 5 of answer, first paragraph).

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Concerning the separate rejection of claim 29 with Boire as the primary reference, the issue on appeal is the same, namely, the antireflective, infrared reflective and primer layers of Boire have thicknesses outside the claimed ranges. However, for the reasons set forth above, we find that it would have been obvious for one of ordinary skill in the art to modify the thicknesses of the relevant layers of Boire in order to achieve the desired optical properties. We note again that appellants base no arguments on objective evidence of nonobviousness which establishes that the claimed thicknesses for the various layers produces unexpected results. Appellants maintain that "it is not simply the manipulation of a single layer of a coating but rather the manipulation of several layers of a coating with the understanding that the layers interact with each other to provide the desired overall performance" (sentence bridging pages 17 and 18 of brief). However, as discussed above, it was known in the art that the thicknesses of the layers can be altered to obtain the desired levels of luminous transmission, solar heat gain coefficient, etc. Indeed, appellants have not provided a convincing rationale why the combination of the claimed thicknesses for the three layers would have been nonobvious to one of ordinary skill in the art.

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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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THOMAS A. WALTZ)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
)	
BEVERLY A. FRANKLIN)	
Administrative Patent Judge)	

ECK:hh

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