

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HERBERT GROOTHUES, VOLKER MENDE,
HANS LORENZ, GUENTHER ITTMANN,
THOMAS HASSKERF, NORBERT BRAND,
and BERNHARD SCHAEFER

Appeal 2008-1652
Application 10/485,257
Technology Center 1700

Decided: June 30, 2008

Before EDWARD C. KIMLIN, JEFFREY T. SMITH, and
KAREN M. HASTINGS, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL

Statement of the Case

This is an appeal under 35 U.S.C. § 134 from a final rejection of claims 14-27. We have jurisdiction under 35 U.S.C. § 6.¹

¹ An Oral Hearing for this appeal was held on May 13, 2008.

Appellants' invention relates to a plastics article with low thermal conductivity, high light transmittance, and absorption in the near infrared region on one side of the article. The plastics article is useful as a thermally insulating and sun-screening material for roofing and for glazing. An understanding of Appellants' invention can be gleaned from independent claim 14 which appears below:

14. A plastics article, comprising:

a base molding manufactured from a transparent thermoplastic base material, and comprising at least two opposite sheet-like layers bonded to one another by vertical or diagonally arranged fillets,

wherein one of the sheet-like layers is provided with an additional layer comprising a plastics matrix of transparent plastics base material, and

wherein the additional layer is an IR-absorbent layer comprising at least one IR absorber not impairing transparency of the plastics article and having an average transmittance of less than 80% in near infrared radiation region from 780 nm to 1100 nm,

wherein a light transmittance of the plastics article is from 15 to 86%, a heat transfer coefficient is 4 W/m²K or less, and a SC is 1.15 or greater.

The Examiner relies on the following references in rejecting the appealed subject matter:

Haig	US 3,291,746	Dec. 13, 1966
Heemsherk	EP 0 019 329	Nov. 11, 1980
Kashima	JP 03-161644	Jul. 11, 1991
Kaieda ('031)	EP 0 607 031	Jul. 20, 1994
Kaieda ('146)	JP 06-240146	Aug. 30, 1994
Campbell	US 5,580,620	Dec. 3, 1996
Benz	US 6,110,561	Aug. 29, 2000

The Examiner finally rejected the appealed claims 14-27 as follow:

- I. Claims 14-20 and 22-27 stand rejected under 35 U.S.C. § 103(a) over Benz in view of any of Kashima, Kaieda ‘146, Kaieda ‘031 or Heemskerk.²
- II. Claim 21 stands rejected under 35 U.S.C. § 103(a) over Benz in view of JP 03- 161644, JP 06-240 146, EP 060703 1 or EP 00 19329, and further in view of Campbell.
- III. Claims 14-27 stand rejected under 35 U.S.C. § 103(a) over the admitted prior art, pages 1 and 2 of the Specification, in view of Haig.

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 affirm the Examiner’s rejections for substantially the reasons set forth by the Examiner in the Answer, which we adopt and incorporate herein.

Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). “[A]nalysis [of whether the subject matter of a claim would have been obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l*

² English-language translations of the Kashima and Kaieda ‘146 documents have been provided in the present record. Appellants have not objected to the use of machine translations.

Appeal 2008-1652
Application 10/485,257

Co. v. Teleflex, Inc., 127 S. Ct. 1727, 1740-41 (2007) quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006); *In re Bozek*, 416 F.2d 1385, 1390 (CCPA 1969) (“Having established that this knowledge was in the art, the examiner could then properly rely, as put forth by the solicitor, on a conclusion of obviousness ‘from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference.’”); *In re Hoeschele*, 406 F.2d 1403, 1406-07 (CCPA 1969) (“[I]t is proper to take into account not only specific teachings of the references but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. . . .”).

KSR further states that the “analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 127 S. Ct. at 1741. *See also DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006)(“Our suggestion test is in actuality quite flexible and not only permits, but *requires*, consideration of common knowledge and common sense”); *Alza Corp. v. Mylan Labs., Inc.*, 464 F.3d 1286, 1291 (Fed. Cir. 2006)(“There is flexibility in our obviousness jurisprudence because a motivation may be found *implicitly* in the prior art. We do not have a rigid test that requires an actual teaching to combine...”).

*Rejections over Benz in view of any of Kashima, Kaieda ‘146,
Kaieda ‘031 or Heemskerk.*

Appellants contend that Benz in view of any of Kashima, Kaieda ‘146, Kaieda ‘031 or Heemskerk alone, or in combination, fail to disclose or suggest a plastics article as claimed, comprising: an IR-absorbent

layer comprising at least one IR absorber not impairing transparency of the plastics article and having an average transmittance of less than 80% in a near infrared radiation region from 780 nm to 1100 nm, light transmittance of the plastics article is from 15 to 86%, a heat transfer coefficient is 4 W/m²K or less, and a SC is 1.15 or greater. Appellants contend that Benz would not lead a person of ordinary skill in the art to use IR absorbent layers as they disclose IR reflective coatings as additional functional layers. (App. Br. 4). Appellants further contend Benz teaches away from using IR absorbent layers as they disclose IR reflective coatings as additional functional layers. In addition, even if combined, in Heemsherk, the absorbing sub-layer is a distinct layer from the reflecting sub-layer and not equivalent. (App. Br. 5).

Correspondingly, the first obviousness issue presented is: Did Appellants identify reversible error in the Examiner's rejection of claims 14-20 and 22-27 under § 103? We answer this question in the negative. The issue turns on whether a person of ordinary skill in the art would have reasonably expected that an IR absorbent functional layer was suitable for use in the article of Benz.

A claimed invention is unpatentable if the differences between it 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." 35 U.S.C. § 103. "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. The question to be asked is "whether the improvement is more than the predictable use of prior

art elements according to their established functions.” *KSR*, 127 S. Ct. at 1740.

The Examiner properly determined that Benz discloses that additional functional layers can be included on the multi-ribbed plates. (Ans. 3). The disclosure of Benz appearing in column 6 provides exemplary functional layers that could be added. Specifically Benz states “[t]he multi-ribbed plates according to the present invention may, furthermore, have functional layers on the outer and/or inner sides of the hollow chambers, such as...” (Benz, col. 6, ll. 48-50). Benz describes various repellent coatings and absorbent coatings that are suitable as additional functional layers. However, Benz does not specifically disclose an IR absorbent layer as the additional functional layer. The Examiner relies upon a variety of additional references as evidence that IR absorbent layers, including those utilized by Appellants, are known to persons of ordinary skill in the art.³ (Ans. 4-5). Under these circumstances, we concur with the Examiner that a person of ordinary skill in the art would have had sufficient skill and creativity to utilize an IR absorbent layer in the article of Benz. A person of ordinary skill in the art who desired to absorb IR rays would have been led to the claimed subject matter, motivated by a reasonable expectation that the utilization of known IR absorbent layers would have been appropriate for this purpose. *Cf. In re Ludwig*, 353 F.2d 241, 243-244 (CCPA 1965). (Patentability does not convey to an invention where only simple observation is required to ascertain a problem). A person of ordinary skill in

³ The Examiner contends that the claimed transparency and transmittance characteristics are properties of the claimed absorbents. (Ans. 4). The Appellants have not refuted the Examiner's contention.

the art would have had sufficient skill to select the appropriate type of absorbent layers for the plastic article of Benz.

Appellants fail to set forth separate, substantive arguments for claims 15-20 and 22-27. While Appellants devote a separate paragraph to each of these claims on appeal, and repeatedly state that the applied references “fail to disclose or suggest” the added limitation of the dependent claim (such as the type of IR absorber), these conclusory remarks are not tantamount to the requisite substantive arguments that set forth why the Examiner’s rationale for the obviousness of the claimed features is in error. Because we do not find Appellants’ arguments persuasive as to independent claim 14, it follows that these arguments are unpersuasive as to claims 15-20 and 22-27.

Regarding the rejection of claim 21 under 35 U.S.C. § 103(a), we affirm this rejection advanced by the Examiner.⁴ Appellants’ arguments repeat those presented for independent claim 14 (rejection discussed above) and Appellants have not otherwise presented separate arguments on the merits for the rejection of claim 21. In this regard, Appellants do not assert non-obviousness based on the additional limitations set forth in claim 21 by explaining how the additional Campbell reference applied thereto by the Examiner fails to establish the obviousness of the additional features recited in this separately rejected dependent claim. Because we do not find Appellants’ arguments persuasive as to independent claim 14, it follows that these arguments are unpersuasive as to claim 21.

⁴ In rejecting the subject matter of claim 21, the Examiner adds Campbell to the combination of Benz in view of any of Kashima, Kaieda ‘146, Kaieda ‘031 or Heemskerk.

For the foregoing reasons and those presented in the Answer, the rejection of claims 14-20 and 22-27, and the rejection of claim 21, under 35 U.S.C. § 103(a) are affirmed.

The Rejection over pages 1 and 2 of the Specification in view of Haig.

Appellants contend that that none of the references, alone or in combination, discloses or suggests the combination of the claimed light transmittance, heat transfer coefficient and SC. (App. Br. 16). Appellants further contend that if an IR absorber is included in the basic molding, or IR absorbing layers are attached on both sides of a sheet, plastic composites would result, which would dissipate a lot of absorbed heat energy on their underneath side, thus providing an unwanted greenhouse effect without providing an insulating effect. (App. Br. 17)

Therefore, the second obviousness issue presented is: Did Appellants identify reversible error in the Examiner's rejection of claims 14-27 under § 103? We answer this question in the negative. The issue turns on whether a person of ordinary skill in the art would have reasonably expected that an IR absorber was suitable for incorporation into the resin material or to form an additional IR absorber layer on a plastic molded product.

The Examiner contends that the difference between the prior art discussed at pages 1 and 2 of the Specification and the present invention is that in the present invention the IR absorber is in one layer and not in the entire plastics article. (Ans. 6). The Examiner properly found that Haig teaches it was known to either incorporate the IR absorber into the resin material or to form an additional IR absorber layer on a plastic molded product. (Ans. 6). The Examiner contends that the claimed transparency

and transmittance characteristics are properties of the claimed absorbents. (Ans. 6). The Appellants have not refuted the Examiner's contention.

Appellants' arguments that including an IR absorber in the various layers of the plastic article would result in unwanted greenhouse effect without providing an insulating effect are not persuasive. These arguments are not commensurate in scope with the claimed invention because the claimed subject matter does not preclude the inclusion of an IR absorber in additional layers of the plastic article. Under these circumstances, we concur with the Examiner that the claimed subject matter is not patentable over the cited prior art.

Appellants fail to set forth separate, substantive arguments for claims 15-27. While Appellants devote a separate paragraph to each of these claims on appeal, and repeatedly state that the applied references "fail to disclose or suggest" the added limitation of the dependent claim (such as the type of IR absorber), these conclusory remarks are not tantamount to the requisite substantive arguments that set forth why the Examiner's rationale for the obviousness of the claimed features is in error. Because we do not find Appellants' arguments persuasive as to independent claim 14, it follows that these arguments are unpersuasive as to claims 15-27.

For the foregoing reasons and those presented in the Answer, the rejection of claims 14-27 under 35 U.S.C. § 103(a) is affirmed. As a final point with respect to the § 103 rejection, we note that Appellants base no argument upon objective evidence of nonobviousness, such as unexpected results.

Appeal 2008-1652
Application 10/485,257

ORDER

The rejections of claims 14-27 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)(1)(iv).

AFFIRMED

PL Initial:
sld

OBLON, SPIVAK, MCCLELLAND,
MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314