

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT J. FLEMING

Appeal No. 2003-0625
Application No. 09/954,729

ON BRIEF

Before KIMLIN, OWENS, and KRATZ, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from the final rejection of claims 17, 19-22 and 29-31, which are all of the claims remaining in the application.

THE INVENTION

The appellant's claimed invention is directed toward a method for making a colored retroreflective article. Claim 17 is illustrative:

17. A method of making a colored retroreflective article, which method comprises:

contacting a precursor color coating with optical elements, wherein the precursor color coating comprises a reactive dye, reflective flakes, and a polymer precursor; and

curing the precursor color coating to form a colored layer that contains the reflective flakes, that has the dye covalently bonded to a polymer, and that has the optical elements supported by the colored layer.

THE REFERENCES

Maeda et al. (Maeda)	3,879,336	Apr. 22, 1975
Li	5,283,101	Feb. 1, 1994
Billingsley et al. (Billingsley)	5,812,317	Sep. 22, 1998

THE REJECTIONS

The claims stand rejected under 35 U.S.C. § 103 as follows: claims 17, 19-22, 30 and 31 over Billingsley in view of Maeda, and claim 29 over Billingsley in view of Maeda and Li.

OPINION

We affirm the aforementioned rejection.

The appellant states that the claims stand or fall together (brief, page 3). Although an additional reference is applied to claim 29, the appellant does not provide an argument as to the separate patentability of that claim. Consequently, we limit our discussion to one claim, i.e., claim 17, which is the sole independent claim. See *In re Ochiai*, 71 F.3d 1565, 1566 n.2, 37 USPQ2d 1127, 1129 n.2 (Fed. Cir. 1995); 37 CFR § 1.192(c)(7)(1997).

Billingsley discloses a method for making a colored retroreflective article by contacting a polymeric coating precursor (intermediate layer 18) with optical elements

(microspheres 12) and curing the polymeric coating precursor, such that the optical elements are supported by the polymeric intermediate layer (col. 2, lines 60-67; col. 6, lines 19-47).¹ One of the two preferred polymeric coatings is poly(urethane-ureas) (col. 4, lines 26-43). The polymeric coating can contain other components including dyes and metal flakes (col. 5, lines 32-34). Billingsley does not indicate that a dye can be covalently bonded to the polymer.

Maeda discloses a method for making a colored polyurethane synthetic leather (col. 1, lines 12-13). The coloring is provided by a complex metal dye which bonds to the synthetic leather substrate through urea or urethane type covalent bonds (col. 4, lines 12-15; col. 5, lines 4-5; col. 6, lines 25-27). The covalent bonding improves the washing fastness and reduces the bleeding of the dyed substrate (col. 4, lines 15-16; col. 6, lines 29-33).

The examiner points out that Billingsley desires laundering durability (col. 4, line 20; col. 6, line 41), and argues that it would have been obvious to one of ordinary skill in the art to use Maeda's reactive dye as Billingsley's dye so that covalent bonds are formed between the dye and Billingsley's poly(urethane-urea) which provide the dyed poly(urethane-urea) with high washing fastness (answer, page 4).

¹ The intermediate layer has adjacent to it, on the side opposite to the microspheres, a reflective metal layer (16), adjacent to which is a polymeric binder layer (14), adjacent to which is a substrate (20) (col. 2, lines 60-67; figure 1). The reflective metal layer, which has, typically, a thickness of about 50-150 nanometers (col. 5, lines 10-11), is sufficiently thin that, Billingsley believes, there is bonding between the intermediate layer and the binder layer (col. 6, lines 37-47).

The appellant argues that because Billingsley and Maeda are in distinctly different fields (Billingsley in the retroreflective article field and Maeda in the synthetic leather field), there is no suggestion to combine their teachings (brief, pages 4-7).

For a *prima facie* case of obviousness to be established, the applied prior art must be such that it would have provided one of ordinary skill in the art with both a motivation to carry out the claimed invention and a reasonable expectation of success in doing so. See *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991); *In re O'Farrell*, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988).

One of ordinary skill in the art would have been motivated to use Maeda's reactive dye as Billingsley's dye to obtain improved washing fastness as disclosed by Maeda (col. 6, lines 29-31). One of ordinary skill in the art would have had a reasonable expectation of success in doing so because one of Billingsley's two preferred polymers is a poly(urethane-urea) (col. 4, lines 35-36), and Maeda teaches that the reactive dye adheres to the polymer by forming urethane or urea type covalent bonds with the polymer (col. 6, lines 25-27).

The appellant argues that the working examples show that the invention provides good retroreflectivity and good industrial wash durability (brief, page 7). This argument is not well taken because the appellant has not carried the burden of explaining the relevance of the relied-upon evidence. See *In re Borkowski*, 505 F.2d 713, 719, 184 USPQ 29, 33 (CCPA 1974).

The appellant argues that Billingsley is concerned with industrial laundering durability, whereas Maeda does not discuss laundering durability (brief, page 7).

Actually, Maeda teaches that the reactive dye provides improved washing fastness (col. 6, lines 29-31). Maeda does not disclose industrial laundering, but the teaching that use of the reactive dye improves washing fastness reasonably appears to pertain to any type of laundering. Regardless, although Billingsley indicates that garments such as firemen's jackets and construction workers' safety vests to which his retroreflective articles are applied must withstand industrial laundering conditions (col. 1, lines 36-45), Billingsley also teaches that the retroreflective articles can be used on any launderable clothing articles including shirts, sweaters, suits and one-piece body garments (col. 7, lines 3-12). Thus, Billingsley's retroreflective articles are not limited to retroreflective articles which are applied to clothing articles that are industrially laundered.

The appellant argues that there is no evidence that Maeda's dye would be suitable for making a retroreflective article (brief, page 7). The appellant argues, in reliance upon an affidavit by Billingsley (filed February 20, 2002, paper no. 6), that the effect of the dye on optical element retention, reflectivity and light transmission is unknown (reply brief, pages 2-3). These arguments are not persuasive because Billingsley's teaching that the intermediate layer can contain dyes (col. 5, lines 31-33) would have provided one of ordinary skill in the art with a reasonable expectation that

any dye known to be suitable for dyeing a poly(urethane-urea) (Billingsley's intermediate layer) would not adversely affect the properties of the retroreflective article. Such a dye is Maeda's reactive dye (col. 4, lines 12-14; col. 5, lines 4-5). We note that for a *prima facie* case of obviousness to be established, all that is required is a reasonable expectation of success, not absolute certainty. See *O'Farrell*, 853 F.2d at 904, 7 USPQ2d at 1681.

The appellant argues that because Maeda was published approximately 20 years before Billingsley's filing date, Billingsley's silence regarding the use of reactive dyes is good evidence that the use of such dyes as Billingsley's dye would not have been obvious to one of ordinary skill in the art (brief, page 8). This argument is not convincing because obviousness is determined based on what would have been obvious to the hypothetical person of ordinary skill in the art, rather than to particular individuals. See *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1454, 223 USPQ 603, 614 (Fed. Cir. 1984).

The appellant argues that Maeda, which is in the field of preparing colored synthetic leather, is nonanalogous art with respect to the appellant's claimed invention, which is in the field of preparing retroreflective articles that are launderably durable (brief, page 8). The appellant relies (brief, page 10; reply brief, page 2) upon the statements in the Billingsley affidavit that "in the past 15 or more years of working in the field of producing retroreflective articles, I have not - nor am I aware of another person

who works in the laboratory where I work who has - consulted a reference in the synthetic leather field for solutions to problems in developing launderably durable retroreflective articles” (page 2, item 10), and that “I am not aware that synthetic leather articles encounter these problems [optical element retention and preservation of the reflective layer or material] or offer solutions to them” (page 3, item 12).

The test of whether a reference is from an analogous art is first, whether it is within the field of the inventor's endeavor, and second, if it is not, whether it is reasonably pertinent to the particular problem with which the inventor was involved. *See In re Wood*, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979). A reference is reasonably pertinent if, even though it may be in a different field of endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering the inventor's problem. *See In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1061 (Fed. Cir. 1992).

Because Maeda deals with the washing fastness of dyed polyurethanes (col. 6, lines 16-33), Maeda logically would have commended itself to an inventor's attention in considering the problem of poor washing fastness of dyed polyurethane layers of retroreflective articles. Consequently, Maeda is analogous art.

For the above reasons we conclude that a *prima facie* case of obviousness of the appellant's claimed invention has been established and has not been effectively rebutted by the appellant.

DECISION

The rejections under 35 U.S.C. § 103 of claims 17, 19-22, 30 and 31 over Billingsley in view of Maeda, and claim 29 over Billingsley in view of Maeda and Li, are affirmed.

No 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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)	BOARD OF PATENT
TERRY J. OWENS)	APPEALS
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PETER F. KRATZ)	
Administrative Patent Judge)	

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3M INNOVATIVE PROPERTIES COMPANY
P.O. Box 33427
St. Paul, MN 55133-3427