

The opinion in support of the decision being entered today
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RICHARD M. GIBSON, WILLIS D. CAMPBELL, JR.,
ALBERT E. JOHNSON, KENNETH P. WALLACE,
and ALLEN J. HAWKS

Appeal 2007-1374
Application 10/701,714
Technology Center 1700

Decided: June 14, 2007

Before EDWARD C. KIMLIN, BRADLEY R. GARRIS, and
CATHERINE Q. TIMM, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1, 3-8, and 10-18. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

I. BACKGROUND

The invention relates to a fabric for use in safety apparel that is flame resistant and highly visible. Claim 1 is illustrative of the subject matter on appeal:

1. A fabric for use in safety apparel, comprising:
 - (a) yarns spun from an intimate blend of staple fibers, at least 60 percent of the staple fibers being modacrylic fibers and up to 40 percent other fibers;
 - (b) at least one dye type applied to said fabric that is selected to apply a high-visibility dye to both the modacrylic and other fibers in the blend; and
 - (c) wherein, the fabric meets both the American National Standards Institute standard ANSI/ISEA-107 minimum conspicuity requirements for occupational activities for high-visibility safety apparel and the American Society for Testing and Materials standard ASTM-F-1506 for flame resistance.

The Examiner relies on the following prior art references to show unpatentability:

Montgomery	US 5,033,262	Jul. 23, 1991
Lundsford (Lundsford '835)	US 6,547,835 B1	Apr. 15, 2003
Lundsford (Lundsford '964)	US 6,626,964 B1	Sep. 30, 2003
Zhu	US 2005/0025963 A1	Feb. 3, 2005

The rejections as presented by the Examiner are as follows:

1. Claims 1, 3, 4, 6, 8, 10, 11, 13, and 15-18 are rejected under 35 U.S.C. § 103(a) as unpatentable over Zhu in view of Montgomery;
2. Claims 5 and 12 are rejected under 35 U.S.C. § 103(a) as unpatentable over Zhu and Montgomery and further evidenced by Lunsford '964; and

3. Claims 7 and 14 are rejected under 35 U.S.C § 103(a) as unpatentable over Zhu and Montgomery and further evidenced by Lunsford ‘835.

II. DISCUSSION

A. Issue

The Examiner finds that Zhu suggests an intimate blend of staple fibers as required by part (a) of claim 1 (Answer 3). The fibers are used for making clothing that is flame resistant in accordance with the claimed requirements (*id.*). The Examiner acknowledges that while Zhu exemplifies dyed fabric, Zhu does not use a dye that will meet the claimed conspicuity requirements for occupational activities for high visibility safety apparel (*id.*), i.e., Zhu does not disclose using dyes such as standard International Orange dyes. According to the Examiner, it would have been obvious to one of ordinary skill in the art to have used the International Orange dye formulation taught by Montgomery for use in the fire resistant safety apparel of Zhu to provide high visibility (*id.*).

Appellants’ sole contention on appeal is that there is no teaching, suggestion, or motivation to modify the fabric of Zhu with the International Orange dye of Montgomery (Br. 9). According to Appellants, Zhu only discloses dying a scoured fabric with acid dye and does not recognize a conspicuity and/or high visibility problem (*id.*). Moreover, according to Appellants, Montgomery describes a different kind of material, a fabric from corespun yarn, and does not recognize that an intimately blended yarn and fabric structure must meet the standards described in Appellants’ Specification (*id.*). Appellants also note that while Montgomery discloses

using International Orange dye to dye the outer sheath, there is no reference to acid dyes, or any other class of dyes (*id.*).

The Examiner responds that both references are directed to similar fire resistant safety fabrics with similar polymer compositions and that, coupled with the known use of International Orange dye for meeting the claimed conspicuity requirements, the art provides the basis for the finding of a reason to combine the teachings of the references (Answer 5-6).

The sole issue arising out of the contentions of Appellants and the Examiner is: Have Appellants overcome the rejection by showing that the evidence does not support the Examiner's finding of a reason to combine? *See In re Kahn*, 441 F.3d 977, 985-86, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness" (emphasis omitted)).

Appellants provide no additional arguments directed to any particular claim or to the additional subsidiary rejections which add the Lunsford references as evidence of obviousness. We, therefore, decide the appeal as to all the claims and rejections based on the analysis of the above issue with respect to claim 1.

B. Facts

Zhu describes a flame retardant intimate fiber blend of aramid fiber, modacrylic staple fiber, and polyamide staple fiber (Zhu ¶ 4). The intimate blend is used to make fire resistant fabrics suitable for people who work near flames, high temperatures, or electric arc flashes, and the like (Zhu ¶ 10). Zhu does not provide any detailed teaching about dying in the general

discussion of the invention, but each of the exemplified fabrics is dyed using acid dye (Examples 1 and 2, Comparative Example A).

Both Zhu and Montgomery indicate that it was known that inherently flame retardant fibers such as Nomex aramid fibers can be difficult to dye (Zhu ¶ 1; Montgomery, col. ll. 34-59). Montgomery notes that fabrics of 100% Nomex must be either producer-dyed or solvent-dyed to achieve International Orange colors (Montgomery, Example 3).

Montgomery describes a flame retardant corespun yarn for fire resistant safety apparel that includes an aramid fiber core covered with a core wrapper and outer sheath that may be either natural or synthetic fibers such as cotton, wool, polyester, modacrylic, or blends of these fibers (Montgomery, col. 1, l. 63 to col. 2, l. 12). Example 3 describes a fabric made with modacrylic fibers in the outer sheath that can be dyed using “standard International Orange dye formulations developed for 100% acrylic fabrics because the acrylic fibers are positioned on the outside of the yarn.”

C. Analysis

Appellants’ arguments are not convincing because they focus only on selected portions of the references without considering the prior art as a whole as it would have been viewed by one of ordinary skill in the art. When properly considered, the evidence sufficiently supports the Examiner’s finding of a reason to combine the teachings of the references. Both Zhu and Montgomery are directed to fire resistant safety fabrics. The use of acid dye in Zhu’s examples indicates that dying fabrics containing intimate fiber blends including modacrylic fibers was known in the art and considered desirable. Montgomery provides evidence that dying fire resistant safety fabrics International Orange was also understood in the art as

desirable. Moreover, the standard International Orange dye formulation of Montgomery is a dye developed specifically for acrylic fabrics and used by Montgomery on fabrics including modacrylic fibers. The reason to combine is based on the use of a known composition, International Orange dye, for its known use of dying fabric containing acrylic fibers for the predictable result of obtaining an International Orange colored fabric.

In determining that there was an apparent reason to combine, the Examiner correctly took into account the interrelated teachings of the prior art references, the effects of the demands on those in the fire resistant safety fabric art to produce fire resistant high visibility fabrics, and the background knowledge of the ordinary artisan as evidenced by the references and the known standards for such fabrics. *See KSR Int'l. v. Teleflex Inc.*, 127 S.Ct. 1727, 1740-41, 82 USPQ2d 1385, 1396 (2007) (“Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.”).

D. Conclusion

Appellants have not shown that the Examiner’s finding of a reason to combine the teachings of the reference is insufficient to support *prima facie* obviousness.

III. DECISION

The Examiner’s decision to reject claims 1, 3-8, and 10-18 under 35 U.S.C. § 103(a) is AFFIRMED.

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IV. 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

clj

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